

CA1
MT 76
- A66



2
NATIONAL ENERGY BOARD
3
REASONS FOR DECISION

In the Matter of Phase III of a Public Hearing
Respecting Tariffs and Tolls to be Charged,
the Financing of the Pipeline, and Other Related Matters
of

FOOTHILLS PIPE LINES (YUKON) LTD.

NOVEMBER 1979

(1)

NATIONAL ENERGY BOARD


REASONS FOR DECISION

In the Matter of Phase III of a Public Hearing
Respecting Tariffs and Tolls to be Charged,
the Financing of the Pipeline, and Other Related Matters of

FOOTHILLS PIPE LINES (YUKON) LTD.

November 1979

Ce rapport est publié
séparément dans les deux
langues officielles



Digitized by the Internet Archive
in 2023 with funding from
University of Toronto

<https://archive.org/details/31761117082909>

NATIONAL ENERGY BOARD

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder, and the Northern Pipeline Act; and

IN THE MATTER OF a public hearing respecting tariffs and tolls to be charged by Foothills Pipe Lines (Yukon) Ltd. (hereinafter referred to as Foothills (Yukon)), the financing of the pipeline and related matters. File No.: 1510-2-2.

Phase III

Heard at Ottawa, Ontario on 23, 24, 25, 26, and 29 October 1979.

Before:

C.G. Edge	Presiding Member
L.M. Thur	Member
R.B. Horner	Member

Appearances:

J.W. Lutes	)	Foothills (Yukon)
E.B. McDougall	)	Northwest Alaskan
John Smith	)	Pipeline Company
M.A. Brown	)	TransCanada PipeLines
	)	Limited
E.B. McDougall	)	Northwest Pipeline
	)	Corporation
G.A. Connell	)	Gulf Canada Resources
	)	Inc.
C.R. Ayers	)	Hudson's Bay Oil and
	)	Gas Company Limited
J.H. Smellie	)	Dome Petroleum
	)	Limited
I.A. Blue	)	Michigan Wisconsin
	)	Pipe Line Company

B.W. Jessup	)	Shell Canada
	)	Resources Limited
J.H. Farrell	)	The Consumers' Gas
	)	Company
John Ballem, Q.C.	)	Canadian Petroleum
	)	Association
François Bregha	)	Canadian Arctic
Nick Schultz	)	Resources Committee
R.W. Deutsch	)	The People of the
	)	State of California
	)	and the Public
	)	Utilities Commission
	)	of California
F. H. Lamar	)	Board Counsel
K. MacDonald)	



TABLE OF CONTENTS

	<u>Page</u>
Recital and Appearances	(i)
Table of Contents	(iii)
Abbreviations and Definitions	(v)
1. <u>INTRODUCTION</u>	1-1
2. <u>APPLICATION FOR REVIEW OF PHASE 1 DECISION</u>	2-1
2.1 Start of the Tariff	2-1
2.2 Minimum Bill and Interim Rate	2-4
2.3 Sustained Outage of Over 30 Days	2-9
2.4 Decision on Review	2-12
3. <u>INCENTIVE RATE OF RETURN</u>	3-1
3.1 Introduction	3-1
3.2 Cost Performance Ratio and Centre Point	3-15
3.3 Operation Phase Rate	3-23
3.4 Minimum Rate	3-34
3.5 Marginal Rate	3-35
3.6 Project Risk Premium	3-38
3.7 IROR Risk Premium	3-43
3.8 One-time Adjustment	3-45
3.9 Summary	3-46
4. <u>PHASE I AND PHASE II TARIFF MATTERS</u>	4-1
4.1 Transition from "Prebuild" to Mainline Tariff	4-1
4.2 Foothills (Yukon) Administrative Expense	4-4
4.3 Tariff Application of the One-Time Adjustment	4-6

5. DISPOSITION

5-1

APPENDICES

- A - Order No. RH-2-79
 Order No. AO-3-RH-2-79
 Order No. PO-4-RH-2-79
 Order No. AO-1-PO-4-RH-2-79
 Order No. RH-R-1-79

- B - Northern Pipeline IROR Regulations

ABBREVIATIONS AND DEFINITIONS

- Board - The National Energy Board
- Canada-U.S. Agreement - Agreement between Canada and the United States of America on Principles Applicable to a Northern Natural Gas Pipeline, dated September 20, 1977.
- CPA - Canadian Petroleum Association
- Designated Officer of the Northern Pipeline Agency - The member of the National Energy Board who is designated under the Northern Pipeline Act as Deputy to the Administrator of the Northern Pipeline Agency.
- Dempster Lateral - The proposed pipeline to transport Canadian natural gas from the Mackenzie Delta along a route generally parallel to the Dempster Highway, connecting with the Northern Pipeline near Whitehorse, Y.T. The Dempster Lateral comprises Zones 10 and 11 of the Foothills (Yukon) pipeline.
- Eastern Leg (in Canada) - At a point just south of Caroline, Alberta, the pipeline will bifurcate. The "eastern leg" will proceed in a southeasterly direction to the Alberta - Saskatchewan border near Empress, Alberta and then to the Canada - United States border near Monchy, Saskatchewan where it will connect with the facilities of Northern Border Pipeline Company (the United States eastern leg).
- F.E.R.C. - The United States Federal Energy Regulatory Commission, formerly the Federal Power Commission.
- F.E.R.C. Order No. 31 - The Federal Energy Regulatory Commission's Order No. 31, "Order Setting Values for Incentive Rate of Return, Establishing Inflation Adjustment and Change in Scope. Procedures, and Determining Applicable Tariff Provisions", Docket No. RM78-12 Issued 8 June 1979.

- F.E.R.C. Order No. 31-B - The Federal Energy Regulatory Commission's Order No. 31-B on Rehearing - Determination of Incentive Rate of Return, Tariff, and Related Issues", Docket No. RM78-12, dated 6 September 1979
- Foothills (Yukon) - Foothills Pipe Lines (Yukon) Ltd. is the parent company responsible for the Canadian portion of the Alaska Highway Gas Pipeline Project. Foothills (Yukon) is currently sponsored 50 per cent each by AGTL and Westcoast. The ownership of the pipeline is segmented into six federally-incorporated subsidiaries.
- Northern Border Pipeline Company - Northern Border (the U.S. eastern leg) is a natural gas pipeline company engaged in transporting gas from an interconnection with the pipeline facilities of Foothills (Sask.) at the international boundary near Monchy, Saskatchewan to points of delivery to the east on Northern Border's system.
- Northern Pipeline Act - "An Act to establish the Northern Pipeline Agency, to facilitate the planning and construction of a pipeline for the transmission of natural gas from Alaska and Northern Canada and to give effect to an Agreement between Canada and the United States of America on principles applicable to such a pipeline and to amend certain Acts in relation thereto", proclaimed into force on 13 April 1978.
- Northern Pipeline Hearing- The hearings held by the National Energy Board during 1976 and 1977 that resulted in a publication of the Board entitled "Reasons for Decision, Northern Pipelines", dated June, 1977, and which led to a certificate of public convenience and necessity, by virtue of the Northern Pipeline Act, to the subsidiaries of Foothills Pipe Lines (Yukon) Ltd.

- Prebuild Facilities and Prebuilding - The facilities of the Foothills (Yukon) pipeline to be built to transmit for export natural gas of Canadian origin before the rest of the pipeline is placed in service for the transmission of Alaska gas.
- Tracking - The ability of a shipper on a pipeline to automatically pass through its share of the cost of transmission on the pipeline to its own customers.
- Transit Pipelines Treaty - Agreement between the Government of Canada and the Government of the United States of America concerning Transit Pipelines, dated January 28, 1977, and ratified on October 1, 1979.
- Western Leg (in Canada) - At a point just south of Caroline, Alberta, the pipeline will bifurcate. The "western leg" will proceed southward to Coleman on the Alberta - British Columbia border and then in a southwesterly direction to the Canada - United States border near Kingsgate, B.C., where it will connect with the facilities of Pacific Gas Transmission Company (the United States western leg).
- Zones 1 to 11 - The zones for the Northern Pipeline and the Dempster Line in Canada, described as follows in the Canada - U.S. Agreement:
- Zone 1 Foothills Pipe Lines
(South Yukon) Ltd.
- Alaska Boundary to point of interconnection with the Dempster Line at or near Whitehorse.
- Zone 2 Foothills Pipe Lines
(South Yukon) Ltd.
- Whitehorse to Watson Lake.

Zone 3 Foothills Pipe Lines
(North B.C.) Ltd.

Watson Lake to point of
interconnection with Westcoast's
main pipeline near Fort Nelson.

Zone 4 Foothills Pipe Lines
(North B.C.) Ltd.

Point of interconnection with
Westcoast's main pipeline near
Fort Nelson to the Alberta - B.C.
border.

Zone 5 Foothills Pipe Lines
(Alta.) Ltd.

Alberta - B.C. border to point of
bifurcation near Caroline,
Alberta.

Zone 6 Foothills Pipe Lines
(Alta.) Ltd.

Caroline, Alta. to Alberta -
Saskatchewan border near Empress.

Zone 7 Foothills Pipe Lines
(Alta.) Ltd.

Caroline to Alberta - B.C. border
near Coleman.

Zone 8 Foothills Pipe Lines
(South B.C.) Ltd.

Alberta - B.C. border near
Coleman to B.C. - United States
border near Kingsgate.

Zone 9 Foothills Pipe Lines
(Sask.) Ltd.

Alberta - Saskatchewan border
near Empress to Saskatchewan -
United States border near Monchy.

Zone 10 Foothills Pipe Lines
(North Yukon) Ltd.

Mackenzie Delta Gas fields in the Mackenzie Delta, N.W.T. to a point near the junction of the Klondike and Dempster Highways just west of Dawson, Yukon Territory.

Zone 11 Foothills Pipe Lines
(South Yukon) Ltd.

A point near the junction of the Klondike and Dempster Highways near Dawson to the connecting point with the Pipeline at or near Whitehorse.

1.1 The Hearing

On 12 April 1979, by Order No. RH-2-79, the National Energy Board ("N.E.B." or the "Board") ordered that a public hearing be held in Ottawa to hear evidence and submissions on the tariffs and tolls to be charged by Foothills Pipe Lines (Yukon) Ltd. ("Foothills (Yukon)"), the financing of the pipeline and other related matters. The Board decided to hear evidence and submissions on these matters in phases.

Phase I of the Hearing, which was completed on 26 June 1979, dealt with the Board's proposed method for the regulation of the tolls and tariffs of the Foothills (Yukon) pipeline, the form and content of the tariff for the pipeline as a whole in Canada excluding provision for "prebuild" facilities in Canada, and the preliminary expenditures incurred up to 31 December 1978 with a view to qualifying them for inclusion in the rate base of Foothills (Yukon) and its subsidiary companies.

On 30 July 1979, the Board released its Reasons for Decision on Phase I and issued Order No. TG-1-79, by which the Board disposed of the above issues.

In Phase II of the Hearing, which was completed on 10 August 1979, the Board considered whether the form and content of the tariff for the movement of Alberta gas through the southern portion of the Canadian segments of the Alaska Highway Gas Pipeline System proposed to be prebuilt (i.e.,

the "prebuild" section) was an appropriate method to use in the determination of just and reasonable tolls for such movement.

On 4 October 1979, the Board released its Reasons for Decision on Phase II and issued Order No. TC-4-79, by which the Board approved the form and content of the Foothills (Yukon) tariff subject to certain conditions set out therein.

1.2 Phase III

By Order No. PO-4-RH-2-79, the Board set down Phase III of the Hearing for 23 October 1979. The purpose of Phase III was to enable the Board to finalize the approach to the Incentive Rate of Return for the Northern Pipeline.

On 28 August 1979, Foothills (Yukon) applied to the NEB pursuant to Section 17 of the National Energy Board Act to review and vary the decision of the Board on Phase I, dated July 1979, with respect to four issues:

1. 30-Day Outage
2. Start of the Tariff
3. Minimum Bill
4. Interim Rate

On 6 September 1979, by its Order No. RH-R-1-79, the Board set down the Foothills (Yukon) Application for Review and Variation for public hearing at the beginning of Phase III, on 23 October, 1979.

In its Reasons for Decision on Phase II of the Foothills (Yukon) Tariff Hearing, the Board considered the issues

of the Transition to the Mainline Tariff in Section 2.3.5 and the Foothills (Yukon) Administrative Charge in Section 3.1. The Board directed that both of these issues should be addressed during Phase III of the Hearing.

Accordingly, the Board, by Order No. AO-3-RH-2-79, amended the description of the subject matter to be considered in Phase III of the Hearing and by Order No. AO-1-PO-4-RH-2-79 directed that evidence, submissions, and argument with respect to the Application by Foothills (Yukon) for Review and Variation of the Phase I Decision be heard first, followed by the hearing of evidence, submissions, and argument relating to the Incentive Rate of Return Scheme and the matters deferred from Phase II.

2. APPLICATION FOR REVIEW OF PHASE I DECISION

On 28 August 1979, Foothills (Yukon) applied for a review of the Phase I Decision on the form and content of the tariff for the pipeline in respect of:

1. 30-Day Outage
2. Start of the Tariff
3. Minimum Bill
4. Interim Rate

The Board, by Order No. RH-R-1-79, indicated that it would undertake a Review and that this would take place at the beginning of Phase III of the Hearing.

2.1 The Start of the Tariff

In Phase I of the Hearing, Foothills (Yukon) had applied for the tariff to begin when all the segments of the line in Canada were complete and ready to provide service. In the United States, the F.E.R.C., by Order No. 31, had ordered that the tariff in the United States would begin when all segments of the line in Alaska, in Canada, and in the United States below the 49th parallel were ready and commissioned for service. The Board decided in Phase I that "the tariff should commence either when gas begins to flow or 60 days after the Board has granted 'leave to open' for all segments of the line in Canada, whichever is the earlier".

In the United States, an Application for Review of the start of the tariff (as well as in respect of the minimum

bill and interim rate and an outage of over 30 days) was dealt with in F.E.R.C. Order No. 31-B, which denied the application in respect of all of these matters.

At the beginning of Phase III of the Hearing, the Board stated that it recognized in certain special combinations of circumstances that the United States tariff could start before the Canadian tariff. Since this possibility was not intended, the Board indicated that it would revise its earlier decision in order to prevent this from happening (see Chapter 2, section 4).

Foothills (Yukon) indicated in its evidence that it was concerned about the criteria to be used in determining the tariff commencement date and whether the Board would act expeditiously to issue a leave to open order. Without resolution of these matters, it claimed that there could be doubts in the minds of investors, which would prejudice the financing of the pipeline.

In its final argument, Foothills (Yukon) stated that it recognized that the tariff could not be expected to start in respect of Alaska gas until leave to open orders had been issued by the Board for all of the segments in Canada. The evidence adduced showed that the Board, in its letter to the Northern Pipeline Agency dated 15 February 1979, which had in turn been sent to Foothills (Yukon), had set forth the criteria for leave to open. The letter contained special references to the circumstances of this pipeline, including, inter alia,

matters pertaining to frost heave and thaw settlement, as well as prevention of propagating fractures in the pipeline. Because of the Board's responsibility for pipeline safety and integrity throughout the life of the pipeline, specific criteria and tests must be met before the Board can be assured on these matters. The Board does not believe that commencing the tariff before the Board has issued leave to open orders is in question. If there is any doubt regarding the criteria to be used over and above those contained in the Board's Gas Pipeline Regulations, in the Board's letter of 15 February 1979, and in the Board's standard practices, Foothills (Yukon) has the means of seeking "clarification" of any outstanding matters through the appropriate channels.

The Applicant's concern as to whether the Board would act expeditiously was based on the word "may" in Section 38(2) of the NEB Act:

"Leave may be granted by the Board under this Section if the Board is satisfied that the pipeline may safely be opened for transmission."

Foothills (Yukon) requested that the tariff contain words to the effect that once Foothills (Yukon) has met the tests required for a leave to open order, such an order will be issued without delay.

The Board does not believe such words are necessary. Past practices are ample evidence of the Board's actions in this regard. Moreover, the Board's letter of 15 February 1979,

setting forth the special criteria for a leave to open order on this pipeline - five and one-half years before it is due to be completed - and requiring Foothills (Yukon) to keep it informed progressively on the design matters, research, and testing in sensitive areas, is further proof of the Board's intention to act expeditiously. Moreover, the Board is willing to grant leave to open orders for segments of the line, as it has for other pipelines. If further demonstration is needed, it is given here and now.

Another matter that Foothills (Yukon) asked to be reviewed was the potential delay of 60 days in the start of the tariff after leave to open orders had been issued. In Phase I of the proceeding, Foothills (Yukon) had indicated that, with reluctance, it might be able to accept a 30 day delay but not 60 days. The issues pertaining to the 60-day delay are similar to those relating to the minimum bill and interim rate, which will be dealt with in the next section.

2.2 Minimum Bill and Interim Rate

On page 24 of the Board's Phase I Decision, it is stated "with respect to the minimum bill and the interim rate that the Board does not accept the position of Foothills (Yukon) on these matters, as it does not give enough weight to the reasonableness of the tariff from the viewpoint of the shippers and consumers in the period of the initial operation of the pipeline". In effect, the Board's finding in Phase I required the inclusion in the tariff of the minimum bill and

interim rate provisions in order for tolls to be "just and reasonable". The F.E.R.C., after review of its Order No. 31, came to the same conclusion in Order No. 31-B.

Foothills (Yukon) adduced new evidence in support of its application for review, asserting first that the pipeline was not financeable unless the full cost of service tariff started immediately at the time the pipeline was ready for service and second that no provision be included for a minimum bill and an interim rate.

Foothills (Yukon) indicated that it would have to raise \$1.5 billion of common equity (25 percent of the total cost of \$6.0 billion), and that the carrying cost, on a conservative basis of 11 percent, would be \$165 million annually. Furthermore, Foothills (Yukon) asserted that common dividends of \$300 million could be paid in 1985 if the company received full cost of service upon completion. It further demonstrated that these amounts were very large in relation to funds from operations and profits not only of AGTL and Westcoast, but also of natural gas transmission companies as a whole in Canada. Foothills (Yukon) had no financing plan to place in evidence at this time, and the Board recognizes that to some extent the formulation of a definitive financing plan will be influenced by the decision to be rendered in Phase III of this hearing.

The Board recognizes the size of the Foothills (Yukon) project in relation to the size of the sponsors. In

addition, the Board has the impression that although the Foothills (Yukon) pipeline is highly levered with 75 percent debt, its sponsors are seeking in turn to lever their own equity investments in the pipeline with significant quantities of debt. Such a financing plan may place strains on the cash resources of the sponsors, particularly in view of the large size of the project and the inherently long gestation period, now further extended by the 22-month delay in the completion date, to 1 November 1984. If suppliers of debt capital to the project cannot tailor their servicing needs to the cash flow of Foothills (Yukon) and its sponsors, then some modification of the sponsors' approach to financial planning may become necessary.

Foothills (Yukon) at this time has no transportation contracts with shippers. One shipper, Northwest, indicated in an earlier phase that the signing of a contract was conditional on the ability of the company to track its tariff, but as yet there is no evidence of the trackability of the Foothills (Yukon) tariff, except for the broad principles referred to in F.E.R.C. Order No. 31-B. Foothills (Yukon)'s request for the Canadian tariff to start immediately upon completion of the pipeline is not the same as the starting date of the United States tariff, as approved in Order No. 31-B. Also, if the only basis on which a shipper would sign a transportation agreement would be the immediate tracking of the transportation charges to its customers, a conflict with the President's Decision (referred to below) could occur.

"3. Neither the successful applicant nor any purchaser of Alaska gas for transportation through the system of the successful applicant shall be allowed to make use of any tariff by which or any other agreement by which the purchaser or ultimate consumer of Prudhoe Bay natural gas is compelled to pay a fee, surcharge, or other payment in relation to the Alaska natural gas transportation system at any time prior to completion and commissioning of operation of the system."⁽¹⁾

Foothills (Yukon) in its argument correctly states that the appropriate criterion for a decision by the Board is the justness and reasonableness of tolls, not the trackability of the tariff. The Board expects United States regulatory authorities to approve the tracking of any tariff that the Board finds to be just and reasonable as envisaged in the Canada-U.S. Transit Pipeline Treaty.

While the new evidence adduced amplified the Applicant's previous position, it did not add any new dimension. The Board therefore finds that, apart from the amendment to the commencement date of the tariff announced at the opening of the Phase III Hearing which is described on page 2-12, the clauses as set forth in the Phase I Decision in respect of the start of the tariff, the minimum bill, and the interim rate are necessary components of the tariff, so that the resulting tolls will be just and reasonable, reflecting a

(1) Decision and Report to Congress on the Alaska Natural Gas Transportation System, Executive Office of the President, Energy Policy and Planning, September 1977 (pages 37 and 38).

balancing of the interests of investors, shippers, and consumers. The Applicant's request in these matters is therefore denied.

Notwithstanding the foregoing, the Board recognizes the concern of Foothills (Yukon) with regard to who will finance the carrying cost of the investment in the pipeline if it is complete and ready for service but an extended delay occurs before gas begins to flow in the pipeline. This might arise either from problems in the construction of the Alaska segment or more likely from a delay in completion of the gas processing plant in Alaska. No shipper has yet signed a transportation contract, and the Board believes that none are likely to sign definitive ones until the situation outlined above is clarified. It would appear to the Board that if a significant delay were to occur, then the start of the tariff would have to be deferred and supplementary financing obtained to pay for the carrying costs of the investment in the pipeline. Therefore, it would seem that the issue is more related to the financing matters to be addressed in Phase IV of the Hearing because it goes to the heart of which party is going to provide the assurances of funds being available to maintain the pipeline until it is operational in the event of an extended delay and who will provide the funds. The problem will be reduced in magnitude if the southern portions of the line in Canada will have already been prebuilt and will be in operation. The Board therefore will require Foothills (Yukon)

to address this matter in Phase IV of the hearing. Should this require a modification to the clause in the tariff having to do with the commencement of the tariff, the Board will deal with that matter at that time.

2.3 Sustained Outage of Over 30 Days

In its Phase I Decision, the Board indicated that if an outage of more than 30 days occurred in the operating phase the Board would initiate an enquiry into the cause of the failure to provide service. The Decision implied that if Foothills (Yukon) were responsible for the cause of the outage, then Foothills (Yukon) would lose its return of equity.

The Board, in Phase I, required that the following clauses be inserted in the tariff:

- "(1) In the event of a total interruption of service to a shipper for more than thirty consecutive days on the eastern or western segment or on the whole of the pipeline in Canada, Foothills (Yukon) shall continue to collect the cost of service, as calculated under the rate schedules, for every day that the interruption continues, but commencing on the 31st day of such interruption, that component of the cost of service charge in the tariff to that shipper equivalent to the return of equity shall be held in a deferred revenue account.
- "(2) The disposition of the amount contained in the deferred revenue account referred to in subsection (1) shall be determined by the Board.
- "(3) Any amount to be amortized as a credit to a shipper in a subsequent period will be increased by the addition of interest as allowed in paragraph 5.53 of the General Terms and Conditions, for an overpayment."

Foothills (Yukon), in its application for review, stated that it should only lose its return of equity if "gross negligence" could be proved. In the Hearing itself, it modified its request to that of "negligence".

Counsel for the Canadian Petroleum Association indicated that "negligence" and "fault" were similar terms with a connotation of "beyond the control of prudent management". CPA saw no need to change the discretionary wording of the Board's original decision. A similar view with respect to the principle of prudent management was taken by F.E.R.C. on pages 58 and 59 of Order No. 31-B.

"Alaskan Northwest's attempt to narrow the Commission's considerations of events related to any extended service interruption is rejected. Neither this Commission nor any other party could recite at this time all of the possible events which could cause an extended service interruption. Under the procedures set forth in Order No. 31, the events surrounding the interruption would be reviewed. The 'prudent management' test would obviously be the central consideration in deciding whether the transporter should be permitted to retain the equity costs collected subject to refund. This is not to say that this would be the only consideration. The Commission is unwilling at this time to limit its definition of the considerations which will attend to any proceeding involving an extended service interruption to only those circumstances suggested by Alaskan Northwest (i.e., 'where the Partnership has operated in a grossly negligent manner, or where the Partnership intentionally and willfully and without good cause precipitated an extended service interruption'). Accordingly, Alaskan Northwest's request for modification of the applicable portions of Order No. 31 is denied."

One further aspect of the effect of this clause was whether there would be enough cash for the servicing of debt in all circumstances when the clause was in effect. It would appear to the Board that this would depend on the timing and size of repayments of principal. While it is the intent of the tariff that debt service obligations be met in all circumstances, the Board has already drawn attention to the responsibility of the investment community in this regard. The reference on Page 25 of the Phase I Decision related specifically to the possibility of a large debt repayment in the first year of operation, which could place a strain on the minimum bill provision:

"The Board believes that a repayment of such size may not be appropriate and that it should be possible, through the ingenuity of investment bankers, to avoid heavy debt repayment in the start-up period."

The Board also believes that in subsequent periods prudent management of cash resources could alleviate the potential problems arising from the need to meet large debt repayments during or immediately after a prolonged service interruption. Of course, Foothills (Yukon) would always have the right to seek relief in special circumstances. The Board therefore sees no need to modify the Phase I Decision to ensure the payment of a minimum bill in reasonable circumstances of repayment of principal.

The Board accepts the concept that Foothills (Yukon) should lose its return of equity only in those circumstances

where it was responsible for the cause of the outage and sees no reason to change the Phase I Decision or the wording of the clause to be inserted in the tariff, as the concept of fault as stated above is implicit therein.

2.4 Decision on Review

As indicated at the opening of Phase III of the Hearing, the Board requires Foothills (Yukon) to amend its tariff so that the date of commencement of the tariff shall be as follows.

- "(a) upon the day when gas first begins to flow; or
 - (b) sixty days after the leave to open order has been granted by the Board for the whole of the pipeline in Canada; or
 - (c) upon the day of the commencement of the tariff in the United States under F.E.R.C. Order No. 31 and amendments thereto;
- whichever day shall first occur."

Foothills (Yukon)'s request for changes to the tariff requirements in the Phase I Decision in respect of:

1. 30-day Outage,
2. Start of the Tariff,

3. Minimum Bill, and

4. Interim Rate

is hereby denied.

The Board assures Foothills (Yukon) that it will act expeditiously in leave to open matters and expects Foothills (Yukon) to do so also, particularly with respect to matters relating to frost heave, thaw settlement, and prevention of crack propagation. The Board will not delay the issuance of leave to open orders once it is fully satisfied on the safety and the integrity of the pipeline.

3. INCENTIVE RATE OF RETURN

3.1 Introduction

The background to the Incentive Rate of Return (IROR) Scheme was set forth on pages 3 to 7 of the Board's "Proposed Approach to Incentive Rate of Return for the Northern Pipeline" (October 1978), as follows:

"The traditional tool for cost control in pipeline construction has been regulatory review of expenditures after the project has been completed. This review has taken place in rate proceedings with the risk to investors that imprudently incurred expenditures would be disallowed and therefore would not be recoverable in the rates charged for the transportation service.

"This approach, by itself, is not adequate in the special circumstances pertaining to the Northern Pipeline. Therefore, the United States and Canadian Governments agreed that there should be an economic incentive scheme to control costs to the lowest level consistent with design specifications and sound engineering and operating practices. This is the purpose of the proposal for an Incentive Rate of Return on the equity invested in the pipeline.

. . .

"II. Proposed Approach to Incentive Rate of Return (IROR)

1. Canada-U.S. Agreement

The requirement that an incentive rate of return scheme for the purpose of controlling construction costs should be applied to the companies owning the pipeline in each country was an essential component of the Canada-U.S. Agreement on a northern natural gas pipeline.

This requirement is incorporated in the agreement as follows:

4 (b) The two Governments recognize the importance of constructing the Pipeline in a timely way and under effective cost controls. Therefore, the return on the equity investment in the Pipeline will be based on a variable rate of return for each company owning a

segment of the Pipeline, designed to provide incentives to avoid cost overruns and to minimize costs consistent with sound pipeline management. The base for the incentive program used for establishing the appropriate rate of return will be the capital costs used in measuring cost overruns as set forth in Annex III.

and

4 (c) . . . ; nor will the variable rate of return provisions referred to in subparagraph (b) be continued to the detriment of financing the Dempster Line.

Northern Pipeline Act
S.C. 1977-78
c.20
Schedule 1.

2. The Northern Pipeline Legislation

The Northern Pipeline legislation provided the means in Canada for implementing the Agreement.

3. The objects of this Act are
(a) to carry out and give effect to the Agreement;

Northern Pipeline Act
S.C. 1977-78
c.20

and recognized the need for compatibility between the Incentive Rate of Return Scheme and the financability of the pipeline.

Tolls and Tariffs

33. The Board shall, in fixing the tolls and tariffs of a company, apply the requirements of the Agreement, in particular the requirements of paragraphs 4, 5, 6, 11 and 12 thereof, and
. . . .

34. The Board shall, in determining an appropriate rate of return on equity investment in a company,

(a) take into account

- (i) the capital cost estimates set out in the Agreement, and
- (ii) the extent to which variations in actual costs from the estimates referred to in subparagraph (i) were within or outside the control of the company;

(b) establish a rate of return, taking into account the factors set out in paragraph (a), that is not detrimental, when taken into account with the rate of return of every other company, to the financing of the Dempster Line described in the Agreement, and

(c) comply with such regulations as the Governor in Council may make prescribing or otherwise relating to the manner of calculation of the rate of return.

35. Where a company files a tariff at the time the financing of the pipeline is being considered, the Board may approve the form and content of the tariff and the rate of return on the equity investment of the company.

Northern Pipeline Act
S.C. 1977-78
c.20
Part II - Traffic,
Tolls and Tariffs

3. The Purpose of the Incentive Rate of Return Scheme

The purpose of the Incentive Rate of Return Scheme may be described as follows:

- to provide just and reasonable compensation for investors, in order that sufficient capital may be attracted to finance the project;
- to provide incentives to promote good cost control performance, so that cost overruns will be less extensive than they might have been without IROR;

- to provide transportation service at a lower unit cost than (and not higher than) would have been the case in the absence of IROR.

In summary, the IROR should cause savings in construction costs; such savings will be divided between lower costs to consumers and higher returns to investors as a reward for cost control. Thus, the ultimate effect of applying IROR to hold down costs will be to provide lower cost gas to consumers.

4. Relationship to Financing of the Pipeline

It has always been recognized that the private financing of a pipeline through the United States and Canada, costing over \$10 billion, will be a complex and difficult task. Therefore, investors will need to know with reasonable precision before committing funds, what the rewards to equity investors will be and what the interest coverage and other security features of debt instruments will be.

As already indicated, the Northern Pipeline Act makes provision for the specification of a rate of return at the time the pipeline financing is being considered."

The Board's October 1978 proposal called for written submissions from Foothills (Yukon) and interested parties and resulted in a revised proposal dated January 1979. The final paragraph on page 9 of that document stated:

"It is not anticipated that these draft Regulations will be reviewed again until detailed consideration can be given to the tariff and the financing plan of the pipeline".

Accordingly Board Order No. RH-2-79 indicated that the first item to be considered during Phase III would be:

"To finalize the approach to Incentive Rate of Return for the Northern Pipeline;"

On 26 June 1979, the final day of the Phase I Hearing, counsel for Foothills (Yukon) presented argument requesting that, as it would be necessary to know the decision on the incentive rate

of return before the company could approach the various financial institutions and so establish to the satisfaction of the Board that financing had been obtained, the Incentive Rate of Return be considered in a separate phase of the hearing, prior to the phase during which the financing plan would be reviewed. On 4 July 1979, the Board acceded to Foothills (Yukon)'s request, amended the hearing order, and issued Order No. PO-4-RH-2-79, which stated that the review of the Board's Incentive Rate of Return proposal would take place in a redefined Phase III.

In the meantime, the F.E.R.C. had completed its Rule Making Procedure on "Determination of Incentive Rate of Return, Tariff, and Related Issues" and issued Order No. 31 on 8 June 1979. Applications were made for review of this order and a revised order, Order No. 31-B, was issued on 6 September 1979. The IROR Scheme as set forth in Order No. 31 was virtually unchanged.

The specific terminology used in the Incentive Rate of Return Scheme is set forth on pages 12 to 23 of the October 1978 Board proposal mentioned earlier, as follows:

"A. Description of Terms Used

An understanding of the IROR Scheme requires the use of terms not usually forming part of the terminology used in traditional pipeline regulation. These terms are therefore set forth.

1. Benchmark Rates of Return and Risk Premiums

As a starting point for setting the IROR schedule, certain rates of return can be used as benchmarks. These benchmark rates of return are specifically linked to the various types of unusual risk facing this project.

- (a) Operation Phase Rate: This is the rate of return to be allowed on the adjusted* rate base. It is a starting point for determining the actual incentive rate that will be allowed, and will exclude consideration of the special construction and completion risks of the Northern Pipeline. This rate should be the same as the rate allowed on pipelines of similar operating risk.
- (b) Non-incentive Rate: This rate is arrived at after evaluating the special risks inherent in the Northern Pipeline project. It equals the sum of the Operation Phase Rate and a Project Risk Premium for those construction and completion risks unique to the Northern Pipeline project. This rate would be granted under conventional regulatory practices in the absence of the IROR.
- (c) Centre Rate: The Centre Rate includes compensation for all risks associated with the project. Specifically, it is the sum of the Operation Phase Rate, the Project Risk Premium, and the IROR Risk Premium. (The Centre Rate is equivalent to the Non-incentive Rate plus the IROR Risk Premium). The IROR Risk Premium is to compensate investors for the risk introduced by the variability in the allowed rate of return implied by the adoption of IROR. The Centre Rate will be earned if actual project costs equal the expected level of cost overruns.

In establishing these benchmark rates of return, the primary consideration will be to determine the just compensation for bearing the risks of this project. These risks are affected by (among other factors):

- The cost-of-service tariff to be granted for this project.

* see pages 3-10 to 3-12

- The beneficial effect on marketability of Alaskan gas of rolling in its costs.
- The unusual construction and non-completion risks faced by this pipeline.
- The financing plan of the project sponsors.
- The variability in allowed rate of return imposed by the IROR.
- The degree of flexibility allowed in adjusting estimated costs.

While the overall objective within Canada is to contain costs within 1.35 times 'filed capital costs' in order to benefit from the incentive contained in the Canada-U.S. Agreement, the expected level of cost overruns (i.e., the Centre Point) for different zones of the pipeline, at which the Centre Rate will be earned, will relate more to the construction terrain and weather conditions in each zone.

2. Cost Performance Ratio

The Cost Performance Ratio is an index of the degrees of cost overruns or underruns. It is simply the ratio of actual construction costs to 'filed capital costs' in the Canada-U.S. Agreement including any adjustments for timing changes and other matters as provided for in the Agreement.

The actual construction costs for the purpose of calculating this ratio will include an allowance for funds used during construction (AFUDC)* as well as all monitoring costs, including an estimate approved by the Board of monitoring costs expected to be incurred in the year subsequent to 'leave to open' being granted. However, they will not include working capital, the provision for road maintenance in the Yukon Territory (not to exceed \$30 million Canadian), or property taxes which are also excluded from the 'filed capital costs' as identified in the Canada-U.S. Agreement.

In addition, the actual construction costs will exclude, as set forth in Annex III of the Canada-U.S. Agreement:

* This was the definition as it appeared in the October 1978 Board proposal, but the basis has been changed in the current Decision. (see page 3-19).

'... the effect of increases in cost or delays caused by actions attributable to the U.S. shippers, related U.S. pipeline companies, Alaskan producers, the Prudhoe Bay deliverability or gas conditioning plant construction and the United States or State Governments. If the appropriate regulatory bodies of the two countries are unable to agree upon the amount of such costs to be excluded, the determination shall be made in accordance with the procedures set forth in Article IX of the Transit Pipeline Treaty.'

The 'filed capital costs' in the Canada-U.S. Agreement do not include monitoring costs, but as a result of an exchange of notes by the two governments shall be deemed to include them. Both actual construction costs and 'filed capital costs' for the purpose of calculating the Cost Performance Ratio will exclude working capital.

The IROR schedule will relate a rate of return to each Cost Performance Ratio. As the ratio increases, signifying overruns, the associated rate of return decreases.

3. The Marginal Rate of Return

(a) The Concept of the Marginal Rate

The schedule relating increased cost to the allowed rate of return on equity established by the Board (the IROR schedule) will imply or define the marginal rate of return. The Board must consider the marginal rate in order to determine the cost control incentive created by the schedule. Similarly, equity investors or project sponsors must consider the implicit marginal rate in order to determine the rewards available to them for holding down cost overruns. The relationship of the marginal rate to the investors' cost of capital determines the amount of effort that is justified to avoid cost overruns.

The marginal return is the return on the incremental dollars invested to move from one cost performance ratio to another. For illustration, the following example is used:

<u>Cost Ratio</u>	<u>Allowed ROR</u>
1.2	17.8%
1.3	17.0%
1.4	16.4%

Assume that a ratio of 1.3 has already been reached and in order to complete the project more funds must be invested and a ratio of 1.4 is attained. If the project had been completed at 1.3 (30% overrun), the allowed ROR would have been 17.0%. However, since the project will be completed at 1.4 (40% overrun), the allowed ROR on all equity will decrease to 16.4%.

Given these rates of return, it follows that the actual return earned on the additional dollars invested to move from 1.3 to 1.4 (regarded as 1.3 and 1.4 million dollars: the incremental investment is then 0.1 million dollars) is 8 per cent. This results from the following calculation.

$$\begin{aligned} & \frac{(\text{earnings at 1.4}) - (\text{earnings at 1.3})}{\text{increase in rate base}} \\ = & \frac{(1.4)(.1636) - (1.3)(.17)}{1.4 - 1.3} \\ = & .08 = 8\% \text{ marginal return.} \end{aligned}$$

. . .

4. The Centre Point

One of the Cost Performance Ratios must be chosen as the starting point for constructing the IROR schedule. Once that point has been assigned a rate of return, and the marginal rate has been chosen, the entire schedule can be determined.

The Centre Point is that Cost Performance Ratio which is associated with the Centre Rate of Return. Ratios above the Centre Point will be considered as overruns, yielding rates of return below the Centre Rate. Ratios below the Centre Point will be considered as underruns and will be rewarded with returns higher than the Centre Rate. . . .

In order for the Centre Rate to be perceived by investors as adequate compensation for risk, it should be the rate of return that they would expect to receive. As a result, the Centre Point should be set at the most likely Cost Performance Ratio. Then, if the final costs are at the expected levels, the Centre Rate will be earned.

"B. Allowance for Funds Used During Construction

In the National Energy Board's Gas Pipe Line Uniform Accounting Regulations, the term 'Interest During Construction' (IDC) is used to reflect the financing costs applicable to the funds used for construction purposes. This term is used whether the funds include an equity component or not.

The more common terminology in North America is 'Allowance for Funds Used During Construction' (AFUDC). Since AFUDC is used in the FERC rulemaking document, it will be used in this preliminary draft. AFUDC and IDC should be assumed to be identical terms. The return on common equity used in AFUDC will be the non-incentive rate applied to the amount of common equity invested and the cost of debt and any preferred stock will be the actual cost as determined by the Board.

"C. One-time Adjustment to the Rate Base

The proposed IROR Scheme is based on applying the Operation Phase Rate during the operating phase, but providing a one-time adjustment to rate base when operations start, equivalent to the difference between return on equity expressed in dollars using the incentive rate, and that using the Operation Phase Rate over the operating life of the pipeline. This means that the present value of the revenues to the equity holders provided by application of the Operation Phase Rate to the adjusted rate base would equal the present value of the revenues to the equity holders provided by application of the Incentive Rate of Return to the actual rate base.

The procedure for determining the one-time adjustment is: (1) project the common equity component of actual construction costs* including AFUDC for each operating year by reducing it to zero over a 25-year period (to reflect depreciation recovery); (2) apply the difference between the Incentive Rate of Return and the Operation Phase Rate to the dollar value of the common equity component in each year; (3) calculate the present value of this stream of income, using the Operation Phase Rate as the discount rate; and (4) add the present value determined in (3) to the rate base.

* This was the definition as it appeared in the October 1978 Board proposal but the basis has been changed in the Current Decision (See page 3-19).

This one-time adjustment procedure does not change the present value of the project's revenue stream, as compared to the incentive rate of return. Because of this, the one-time adjustment methodology should yield the same result as varying the rate of return during operation.

The Board supports the one-time adjustment for two reasons. First, it should simplify future determinations in the operating phase of a just and reasonable rate of return for the pipeline. As financial conditions change over the next three or four decades, the rates of return allowed for all pipelines will vary. If the one-time adjustment procedure were not adopted, it would become complicated to establish just and reasonable rates of return for the Northern Pipeline project.

The equity investors in the Northern Pipeline project could be entitled to an incentive rate of return either higher or lower than the rates allowed for other pipelines with comparable operating risks. In any future rate adjustment, these premiums or penalties should remain unchanged, even if rates of return for all pipelines were raised or lowered because of changing financial conditions.

If the one-time adjustment to the rate base is adopted, the future determination of rates of return for the Northern Pipeline can be made without having to consider the IROR mechanism or any penalties or premiums that were awarded for performance during the construction phase of the project. The one-time adjustment will continue to reflect those premiums, so that future rate of return determinations need only consider then-current conditions, not past events.

The second reason is that failure to adopt the one-time adjustment would complicate future financing for expansions or loopings of the Northern Pipeline project. The incentive rate resulting from good or bad cost control on the original pipeline construction should not apply to investments made years later on expansions of the system. Without the one-time adjustment, a separate rate of return and a separate rate base would have to be established for an expansion or looping.

For ratemaking purposes, it is proposed to consider the one-time adjustment to the rate base as an adjustment to the allowance for common equity funds

used during construction. Such procedures are already necessary in cost-of-service calculations without an IROR mechanism, since the allowance for equity funds used during construction must be recognized as an expense in the cost-of-service determination. The common equity component of AFUDC, however, is not an expense for tax purposes but is recognized as a taxable component of the revenues derived from the cost of service."

The F.E.R.C., in its Rule Making Proceeding and in Orders No. 31 and 31-B uses similar terminology. There are, however, certain fundamental differences between the NEB's January 1979 proposal and that expressed in F.E.R.C.'s Orders No. 31 and 31-B.

In Canada, the estimates of the cost to build the pipeline at the time the Canada-U.S. Agreement was negotiated are contained in Annex III to that Agreement and are known as "filed capital costs". In essence, if Canada builds the pipeline for less than 135 percent of the "filed capital costs" then United States shippers will pay 100 percent of the cost of service for the transmission of Canadian gas from Dawson to Whitehorse if and when a Dempster lateral is built to transport Mackenzie Delta and Beaufort Sea gas. The "filed capital costs" provided both a base for the incentive rate of return scheme for Foothills (Yukon) and a point of reference for actions of the Canadian government in monitoring the construction of the pipeline, since building within the 135 percent of the "filed capital costs" would significantly reduce the cost of service paid by Canadian shippers of transporting Mackenzie Delta gas to Canadian markets. The Canadian proposal was relatively uncomplicated and did not attempt to separate the

effect of actions of the pipeline company from those of the Canadian government in terms of the efficient and effective cost control in constructing the pipeline.

On the other hand, the IROR method proposed by the F.E.R.C. is more complex. It seeks to eliminate the effect of inflation by deflating actual costs to a base year by means of specific economic indicators that are in themselves not influenced by the actions of the pipeline company. It provides for a very thorough review of the "certification cost estimate" of the pipeline - probably in 1980 - by the F.E.R.C. and recognizes that the F.E.R.C. may reduce the certification costs if it is not satisfied with the explanation of changes from the estimates used at the time of the Canada-U.S. negotiations. (The Northern Pipeline Act in Canada contained the certificates for the pipeline in Canada and consequently the "filed capital costs" are the certification cost estimates in this country). The F.E.R.C. method provides for adjustments to be made to the certification cost estimates for subsequent changes in design if approved by the Federal Inspector, and for "changes in scope" after construction has begun if mandated by the Federal Inspector. Because the F.E.R.C. method is based on eliminating the effect of the small number of factors over which the pipeline companies have no control, the centre point is expected to be 1.0 or slightly above it. The Canadian scheme of January 1979 did not attempt to do this and used an average centre point of 1.35.

Foothills (Yukon) in its proposal is now seeking a method close to that approved by F.E.R.C.

It is evident that both governments in negotiating the agreement for the pipeline relied greatly on the cost estimates placed in evidence by the pipeline companies at that time. Moreover, favourable performance against those estimates is essential if Canada is to receive the most advantageous treatment of the cost of service on the Dempster line from Dawson to Whitehorse. Therefore, the Board believes that the two governments would not wish to depart from these cost estimates without sound and compelling reasons.

The rates of return in Canada and in the United States just prior to the start of the Board's Phase III Hearing are shown in the following table.

<u>Parameter</u>	<u>CANADA - U.S. IROR PARAMETERS</u>			<u>F.E.R.C Order No. 31-B</u>	
	<u>NEB Proposal, January 1979</u>			<u>Alaska</u>	
	<u>Zone 1</u>	<u>Zones</u>	<u>Zones</u>	<u>Alaska</u>	<u>Northern</u>
	<u>(percent)</u>	<u>2,3,4,5</u>	<u>6,7,8,9</u>	<u>(percent)</u>	<u>Border</u>
		<u>(percent)</u>	<u>(percent)</u>		<u>(percent)</u>
Centre Point	1.45	1.35	1.25*	1.00	1.00
Operation Phase Rate	16.00	16.00	16.00	14.00	13.00
Project Risk Premium	1.25	1.25	1.25	2.00	1.50
IROR Risk Premium	0.5	0.5	0.25	1.50	.50
Centre Rate	17.75	17.75	17.5	17.50	15.00
Marginal Rate	9.00	9.00	9.00	8.00	8.00
Equity AFUDC Rate	17.25	17.25	17.25	14.00	13.00

Note: Zone 1 - Northern Yukon

Zones 2, 3, 4, 5 - S. Yukon, N. British Columbia, N. Alberta

Zones 6, 7, 8, 9 - S. Alberta, S. British Columbia, Saskatchewan

* Except for the "prebuild" for which the centre point will be 1.2

3.2 Cost Performance Ratio and Centre Point

Foothills (Yukon), in requesting a revision to the Board's IROR proposal of January 1979, sought to have the cost performance ratio based on factors solely within its control.

Foothills (Yukon) stated in evidence that its main proposal was virtually identical with F.E.R.C. Orders No. 31 and 31-B. It wished its cost performance to be based on the ratio of actual costs to final design cost estimates with effects of inflation eliminated, and with AFUDC included in both, at the real rate of interest of 6 - 6½ percent (5 percent in the United States). It also wished that the effects of schedule delays, monitoring costs, and scope changes required by the Northern Pipeline Agency be omitted from the actual costs. The centre point would be 1.0 or slightly above it as in F.E.R.C. Order No. 31-B.

As an alternative, Foothills (Yukon) offered another proposal:

"Another approach that could be employed would be to have the National Energy Board determine that the performance ratio would be determined based on the Final Cost Estimate in escalated dollars. The centre point could remain at 1.35 and the rates of return adjusted upward to reflect the increased risk to the equity investor. Differences between actual AFUDC and estimated, costs attributable to monitoring agencies, schedule delays and changes in design and scope mandated by government agencies would be excluded from the determination of the performance ratio."

Views of the Board

The incentive rate of return scheme has to be examined from three points of view: first, its impact on the investors in Foothills (Yukon), second, its effect on Canada's

ability to secure the most favourable tariff on the Dawson/Whitehorse section of the Dempster lateral, and, third, its fairness to consumers.

In general, the Board is sympathetic to the concern of Foothills (Yukon) that its performance not be judged by factors outside its control. On the other hand, the Canada-U.S. Agreement provided for a 35 percent overrun specifically to cover these factors, recognizing that the construction experience of both Westcoast and AGTL for their own pipelines in the previous five years was that actual costs were within five percent of estimates - both over and under.

The latest estimate by Foothills (Yukon) of its construction costs, dated February 1979, filed in these proceedings, was \$5.8 billion, with a starting date of 1 November 1984, compared with \$4.3 billion in the Canada-U.S. Agreement for a starting date of 1 January 1983. This Agreement provided in Annex III for the "filed capital costs" to be adjusted if both governments agreed on a starting date after 1 January 1983. Based on present knowledge, it is reasonable to assume that both governments would agree to a starting date of 1 November 1984 (or, possibly, somewhat later). Therefore, if the "filed capital costs" were adjusted to this new date, using inflation factors incorporated in the estimates of Foothills (Yukon), they would become \$4.9 billion. The \$5.8 billion estimate of actual costs would then be 18 per-

cent greater than "filed capital costs" compared with 35 percent anticipated in the Agreement. Even if \$100 million in monitoring costs are included, the overrun is only 20 percent. There is at this time, therefore, no evidence that the parameters of the original agreement have been exceeded and no compelling reason to deviate from using as a base the "filed capital costs" in the Canada-U.S. Agreement.

Foothills (Yukon) in discussing its proposal did not refer to the need for any adjustment of its final design cost estimates but indicated that they could be compared with the "filed capital costs" in the Agreement. It was conceded by Foothills (Yukon) that F.E.R.C. as set forth in Order No. 31-B, would adjust the certification cost estimates if the F.E.R.C. were not satisfied with them. In argument, Foothills (Yukon) acknowledged the Board's right to change the final design cost estimate for IROR purposes.

"CHAIRMAN: Is that equivalent to saying that if we don't find a reasonable explanation of why they are different we would be liable to reduce your final design cost estimates Mr. Lutes? Is that equivalent to what you are saying?

MR. LUTES: Yes, Mr. Chairman. I think we would have to accept that."

On the subject of inflation, the F.E.R.C. Orders No. 31 and 31-B provided for actual costs of construction to be deflated by a weighted average of 42 specific indexes (where the weights "will change from quarter to quarter and will be based on the proportion of that cost category in the total costs for the project as taken from the estimates in the

Certification Cost Estimate") to a base period and then compared with the final design cost estimates expressed in dollars for the same base period. The related U.S. indexes are not expected to be affected by the construction of the pipeline.

Foothills (Yukon) had not examined any potential Canadian indexes and did not know if satisfactory indexes existed or if they would be independent of the pipeline company's activities. As a consequence, Foothills (Yukon) proposed to leave the resolution of this issue to the Board's review of the final design cost estimates - presumably in 1981 or later. This proposal is unacceptable to the Board.

On the other hand, for the IROR Scheme, the general approach proposed by Foothills (Yukon) of comparing actual costs of construction deflated to a base year with costs expressed in dollars of the base year is acceptable. The "filed capital cost" estimates referred to in the Canada-U.S. Agreement were filed in the Phase III hearing expressed in 1976 dollars and are included in a rearranged format as shown in Schedule 1 to the Northern Pipeline IROR Regulations (Appendix B of these Reasons for Decision). The Board proposes that actual construction costs be deflated to 1976 dollars using the implicit GNP price deflator. This is the index specified in Annex III of the Canada-U.S. Agreement for adjusting the "filed capital costs" where both governments have agreed to a delay in the starting date for the operation of the pipeline.

Because the index is subject to revision, its precise application will be determined by the Board at the time when the deflation adjustment is made. The deflated actual costs would then be compared to the total "filed capital costs" expressed in 1976 dollars for the purpose of determining the cost performance ratio.

The Board accepts the request of Foothills (Yukon) that monitoring costs be excluded from actual costs for purposes of calculating the cost performance ratio.

The Board accepts Foothills (Yukon)'s concern that actual AFUDC rates, because of recent increases in interest rates, may exceed those included in the "filed capital costs". The Board therefore rules that for purposes of calculating the cost performance ratio, actual construction costs will include as a finance charge a provision for funds used during construction (PFUDC) calculated at an annual rate of 11.7 per cent based on the deflated actual cost of construction, compounded annually; this is, the same rate as that used for AFUDC in the "filed capital costs" in the Agreement.

Based on the revised cost estimates, dated February 1979, filed in these proceedings, it is evident at this time that there is a reasonable expectation that the pipeline can be built within 135 per cent of the "filed capital costs" in the Canada-U.S. Agreement. Should Foothills (Yukon) find that its final design cost estimates, if adjusted for delays in the

United States, as provided for with respect to actual costs in the Agreement, exceed 135 percent of the "filed capital costs" adjusted also as provided for in the Agreement, then Foothills (Yukon) may apply to the Board for such modification of the IROR Scheme as it deems appropriate to the circumstances.

While the foregoing provides a realistic basis for measuring Foothills (Yukon)'s performance for purposes of the IROR Scheme based on the "filed capital costs" in the Canada-U.S. Agreement, it does not provide Canada with any relief due to changed circumstances with regard to inflation in respect to the incentive scheme on the Dawson/Whitehorse segment of the Dempster lateral. It is understood that the "filed capital costs" in the Canada-U.S. Agreement were not intended as a measure of the ability of Foothills (Yukon) to forecast inflation. Rather, they were estimates to provide a solid basis of confidence that both governments could rely on in endorsing a project of this magnitude. The higher inflation that is occurring arises in an environment of increases in OPEC oil prices and the spill-over into Canada of higher interest rates in the United States. These factors are outside the control of Canada and of Foothills (Yukon). (United States shippers automatically benefit from the decline in the Canadian dollar relative to the United States dollar since the Agreement was negotiated.) Because of changed external economic circumstances, it would appear fair and reasonable that, for

purposes of the incentive scheme related to the Dawson/Whitehorse segment, the "filed capital costs" in the Agreement were to be replaced with the same "filed capital costs" expressed in 1976 dollars and then escalated to the actual year of construction used in the estimates by applying the GNP price deflator in Canada. The Board recommends that the two governments consider the appropriateness of such a change in the Agreement. The provisions of the Canada-U.S. Agreement relating to adjusting the capital cost estimates for any agreed delay in the starting date for the operation of the pipeline would still apply.

A further factor needs to be considered in the Incentive Rate of Return Scheme. The criteria for the IROR Scheme are the capital costs of construction and of items procured. There may be occasions when the use of lifetime average costs (combining both capital and operating costs) would result in a sounder economic choice of equipment, e.g., compressors. The Board believes that the IROR Scheme should reflect such criteria. Accordingly, the Board will increase the denominator of the cost performance ratio by the increased capital cost approved by the Northern Pipeline Agency by basing its procurement decision on the lowest lifetime annual costs rather than solely on capital costs. The adjustment would be the difference between the capital costs associated with the approved choice and those associated with the equipment that

would have been chosen based solely on capital costs.

Because some of the risks to which Foothills (Yukon) is exposed have been removed by the Board's decisions on the IROR Scheme outlined above, it would appear appropriate to make a modification to the value for each zone of the centre point, i.e., the point at which the centre rate would be earned.

The Board has examined the extent to which it provided for overruns caused by inadequate provision for inflation in its assessment of the probability of cost overruns on the pipeline as a whole in Canada in the Northern Pipeline Decision of July 1977, as well as the estimate of monitoring costs. Consistent with these assessments, the Board has decided that the centre points should be reduced by 0.05 from those contained in its January proposal. Having considered all relevant factors, the Board believes the following centre points should apply.

<u>Zones</u>	<u>Centre Point</u>	
	<u>January 1979 Proposal</u>	<u>Now Authorized in the Decision</u>
1	1.45	1.40
2, 3, 4, 5	1.35	1.30
6, 7, 8, 9	1.25*	1.20**

* Except for prebuilt facilities when 1.20 would apply

** Except for prebuilt facilities when 1.15 would apply

In view of the Board's findings on the foregoing matters, the alternative approach suggested by Foothills (Yukon), where the performance ratio would be determined based on the Final Cost Estimate in escalated dollars, with a centre point of 1.35, and an adjustment to the rates of return to reflect the increased risk to the equity investor, is, in the Board's view, unrealistic and therefore unacceptable.

3.3 Operation Phase Rate

In its November 1978 response to the Board's "Proposed Approach to Incentive Rate of Return for the Northern Pipeline", dated October 1978, the Applicant requested a minimum 17.5 percent operating phase rate of return on common equity. In this proceeding, operating phase rates of 17 - 17.5 percent and 17 percent minimum were recommended respectively by the Company's two witnesses on rate of return, Mr. Lackenbauer and Mr. Evans.

The recommendations made by these witnesses were based essentially on their comparative analyses of the business and financial risks that they felt would confront the common equity investors in Foothills (Yukon) during its operating phase, vis-à-vis those they perceived as presently facing the common shareholders of TransCanada PipeLines Limited.

In their comparative analyses of business risk, the witnesses considered market, supply, and physical risks together with the form of tariff under which the two companies may collect their respective costs of service.

With respect to market risk, Mr. Lackenbauer stated that the two proposed features of "rolled in pricing" and "automatic tracking of costs" to shippers do not lower Foothills (Yukon)'s market risk, which will arise essentially from the price of North Slope gas, to a level below TransCanada's, but at best serve to reduce the higher degree of Foothills (Yukon)'s marketability exposure to a level comparable with that of TransCanada. Mr. Evans stated that the feature of "rolled in pricing" remained exposed to shifts in Government policies and competitive fuel prices, which might cause North Slope gas to become uneconomical and unmarketable. He went on to state that any consequent absence of Alaskan gas would cast considerable doubt on the ability of Foothills (Yukon) to sustain throughput levels sufficient to maintain its economic viability. However, Mr. Evans acknowledged during cross-examination that the firm with which he is an economic consultant, Foster Associates, Inc., had drawn favorable conclusions with respect to the marketability of North Slope gas.

In regard to supply risk, Mr. Lackenbauer noted that, in contrast to TransCanada, which is supplied by a large number of producers, the Alaska Highway Pipeline is dependent on a single, albeit large, source of gas. Mr. Evans also noted Foothills (Yukon)'s dependency on a single gas field and added

that the financial consequences to TransCanada from a shutdown of a particular source of supply would be far less severe than in the case of Foothills (Yukon).

Physical risk relates to those aspects of construction and terrain that represent potential causes of a service interruption. On this subject, both expert witnesses noted that while the TransCanada system incorporates proven design features, is completely looped, and rests on favorable terrain, the Foothills (Yukon) system will be a single line incorporating new design features, e.g., large diameter pipe and high operating pressures, which will traverse relatively inhospitable ground in the permafrost region.

The final comparison drawn by the Applicant's witnesses in the context of business risk was that between the relative benefits to shareholders implicit in the respective forms of tariff of TransCanada and Foothills (Yukon). Mr. Lackenbauer stated that, for all practical purposes, TransCanada operates under a cost of service type arrangement, given that all fixed charges, including the full return on rate base, are reflected in its demand charge, while, on the other hand, the proposed Foothills (Yukon) tariff leaves that Company's shareholders exposed to an abatement of their return on equity in the event of its inability to accept gas. Mr. Evans stated that the proposed Foothills (Yukon) tariff

provides for the recovery of a fair return, except in the event of prolonged service interruptions, together with an unusual degree of protection from on-going inflationary pressures, but that, on the other hand, TransCanada's tariff is based on a forward test year and incorporates a demand charge designed to enable the recovery of all fixed costs. In comparing Foothills (Yukon) with TransCanada, Mr. Lackenbauer concluded that the benefit to Foothills (Yukon) of its proposed tariff, if there were any at all, was not significant. Mr. Evans concluded his comparison by stating that the relative benefits associated with the cost of service tariff were not as great as might otherwise be supposed.

With regard to the matter of the comparative benefits to shareholders implicit in the Foothills (Yukon) and TransCanada tariffs, it was demonstrated during the course of cross examination that both of the Applicant's witnesses were unaware that an inability on the part of TransCanada to meet its contract demand obligations would cause TransCanada's demand charge, which includes all fixed costs, of which the return on and of equity are components, to be abated in proportion to the delivery shortfall. For example, delivery shortfalls of 50 or 100 percent in a given month would cause a 50 or a 100 percent abatement in the collection of the demand charge in the succeeding month. In contrast, under the proposed Foothills (Yukon) Tariff, in the event of either a partial service interruption or a complete service interruption

of thirty days or less, Foothills (Yukon) will continue to bill and collect all of its costs, with the impact on shareholders being limited to a refund of only the relevant proportion of the return on equity collected. In addition, the amount, and thus the impact, of the refund would be reduced if Foothills (Yukon) were able to take advantage of the make-up provisions contained in the tariff. Under these circumstances, the return of equity is unaffected. If a complete interruption occurs that exceeds thirty days, then the return on equity will be impaired, unless recouped under the make-up provisions, and the return of equity may become forfeit, but only if it is determined that the service interruption resulted from imprudence.

However, it also emerged during cross examination, and the Board agrees, that while the consequences of a service interruption are apparently less severe for Foothills (Yukon), the potential for such an interruption arising from the aforementioned physical risks would, at this juncture, appear to be significantly higher for Foothills (Yukon) than for TransCanada.

Based on their comparative analyses, the witnesses drew overall conclusions with respect to the business risks they felt would confront the shareholders of Foothills (Yukon) vis-à-vis those now faced by TransCanada's shareholders. Mr. Lackenbauer stated that in view of the higher business risks of Foothills (Yukon), an investor would require an approximately

one percent higher return than he would if he were to invest in TransCanada, while Mr. Evans stated that "although there exist differences with respect to some of the primary sources of business risk for both Foothills (Yukon) and TransCanada, it cannot be concluded that the composite business risks of Foothills (Yukon) are significantly different from those of TransCanada".

Turning to the examination of financial risk presented by the Applicant's witnesses, it was submitted that the 25 percent equity ratio proposed for Foothills (Yukon) implied greater risk than the 41 percent equity ratio reflected in the Board's July 1979 Reasons for Decision on TransCanada. In attempting to quantify the rate of return adjustment they felt was required to place Foothills (Yukon) on an even footing with TransCanada, currently allowed a 14 percent return on common equity, the witnesses employed several approaches.

One approach employed by both witnesses, like that used in the earlier illustrative Board proposal for the IROR Scheme, was the fitting of a statistical trend line to past TransCanada Decisions to determine the rate of return on common equity implicit for TransCanada if it were to have a 25 percent common equity ratio. This approach yielded an implied rate of return of 16.3 percent.

A second approach employed by both expert witnesses was the analysis of pre-tax rates of return on total capital.

These analyses involved measures of the pre-tax rates of return on TransCanada and a composite of U.S. gas pipelines, which were then applied to the proposed capital structure of Foothills (Yukon) to derive an implicit rate of return on common equity. The results of these analyses were in the order of 20 percent. Mr. Lackenbauer explicitly discounted the results of his analysis, while Mr. Evans stated that he placed greater weight on the results of his other approaches.

Mr. Lackenbauer estimated the Discounted Cash Flow (DCF) cost of common equity capital to TransCanada and derived an implicit DCF cost to Foothills (Yukon) of 16 percent, which he equated with a 17.5 percent return on book common equity. He also cited studies done in the United States which indicated that a 5 - 6 percent risk premium was required by equity investors over a "risk free" investment in government bonds. Adding this to the current Government of Canada bond yield of 10.5 percent he derived a cost of common equity of 15.5 - 16.5 percent.

Another approach, used by Mr. Evans, was to cite the three percentage point difference that existed between the initial operating phase rate of 13 percent suggested by the U.S. Federal Energy Regulatory Commission and the 16 percent most recently suggested by the Board. He applied this difference on an absolute and percentage basis to the current Federal Energy Regulatory Commission proposal of 14 percent, to

derive an implicit rate of return for Foothills (Yukon) of 17 - 17.23 percent. Mr. Evans acknowledged in cross-examination that the findings of both regulatory bodies were based on the consideration of a 25 percent equity ratio. Consequently, this approach would not seem to be a useful guide in quantifying any required risk premium that might arise from the Applicant's proposed capital structure.

Financial risk refers to the particular risk that a common shareholder bears as a result of a firm having financed part of its assets with debt. More simply, financial risk refers to the fact that the revenues generated by a firm's assets must first be used to service debt capital. If any of those revenues remain after debt service requirements and other expenses have been met, they will be available to service equity capital. Under normal circumstances, any upward or downward shifts or variability in a firm's revenues will result in proportionately more or less of those revenues being available to equity investors for any given level of debt service.

In assessing the financial risk borne by the common equity investor in Foothills (Yukon), neither of the Applicant's witnesses apparently gave weight to the fact that the proposed tariff will cause shareholder earnings to be more independent of the level of debt capitalization than is the case with TransCanada or other Canadian gas pipelines having a

tariff structure like that of TransCanada. This is so because the tariff, as discussed on pages 3-26 and 3-27 of this section, provides only for the potential abatement of charges related to the return on and of equity. Charges incorporated in the tariff relating to the return on and of debt capital will not be subject to any abatement, even in the event of service interruptions.

The Board also recognizes, however, that the completeness with which the proposed tariff insulates Foothills (Yukon)'s shareholders from the risk that their returns may be affected by the existence of debt depends in turn on the presumption that costs of transportation will be passed through to shippers over the life of the pipeline. In the event that any costs may not be passed through, it is reasonable to assume that the return to shareholders would be affected in the normal way, which is to say, prior to any of the other components of the cost of service.

Thus, while the financial risk to Foothills (Yukon)'s shareholders has not been entirely negated by the proposed tariff, it is the Board's view that the level of financial risk is less than that inherent in the capital structure of TransCanada, as reflected in the Board's July 1979 Reasons for Decision on TransCanada. Accordingly, the Board cannot assign as much weight to financial risk as that evident in the rate of return recommendations put forward by the Applicant's witnesses in this proceeding.

While it has been concluded that the returns to Foothills (Yukon)'s shareholders are not subject to the potential variability which would otherwise exist in conjunction with a highly levered capital structure, the Board recognizes that their returns may vary, particularly in the event of service interruptions. It is the Board's present view that the potential for such service interruptions is significantly greater than in the case of TransCanada and should be reflected in the operating phase rate allowed in this Decision.

Apart from the factors discussed thus far, additional information found by the Board to be useful in providing perspective with regard to an operating phase rate was contained in Order No. 31 of the U.S. Federal Energy Regulatory Commission, which was also filed as evidence in this proceeding. In that order, the Commission made an assessment of the risks that it felt confronted equity investors in the Alaska and Northern Border segments of the Alaskan Natural Gas Transportation System vis-à-vis those faced by investors in existing U.S. pipelines. The Commission enumerated considerations which included the operating environment, pipeline operating pressure, high cost gas, automatic tracking of costs, rolled-in pricing, reserve to production ratios, proposed capitalization and the cost of service form of tariff. Weighing what it termed the risk-increasing and risk-reducing

factors it had considered, the Commission concluded that the risk exposure of ANGTS investors during the operation phase of the Alaska segment of the project will be somewhat higher than the risk exposure of investors in the typical or average lower-48 pipeline while the risk exposure of ANGTS investors during the operating phase of the Northern Border segment would be less than that on the Alaska portion due to its location.

Having given careful consideration to all of the evidence submitted, and in particular that evidence regarding the differences in risk cited to currently exist between TransCanada and Foothills (Yukon) on a prospective basis, the Board concludes that an operating phase rate of return on common equity as previously proposed of 16.0 percent is fair and reasonable.

In the Board's view, a capital structure based on 75 percent debt and 25 percent equity, yielding a return on equity of 16 percent, represents a situation that may approximate an optimal capital structure for Foothills (Yukon), that is, one which will result in the lowest cost of service to customers. Because of the tendency of the equity component in the capital structure to increase in the operating phase, the Board will review the return on equity each time the common equity in the capital structure deviates by five percentage points from the 25 percent used in this Decision.

It is the view of the Board , in considering the appropriate return on common equity in relation to the

proportion of common equity in the capital structure, that the one-time adjustment to common equity in the IROR Scheme should be disregarded.

3.4 Minimum Rate

In the Board's "Proposed Approach to Incentive Rate of Return for the Northern Pipeline", it is stated that the need for, and magnitude of, a minimum rate of return must be related to the effect of major cost overruns on the cost of transmission, to the attraction of capital for financing the pipeline, and to the protection of financing the Dempster Link pursuant to the Canada-U.S. Agreement. On the basis of these considerations, the Board proposed a minimum rate of return of 14.5 percent.

Both Mr. Lackenbauer and Mr. Evans supported the views of the Board, placing particular emphasis on the need to protect the sponsors' ability to raise additional funds to construct the Dempster Link. Mr. Lackenbauer pointed out that the existence of a minimum rate would serve to provide a cushion should Foothills (Yukon) encounter unanticipated problems in the construction of the mainline, thereby limiting the downside risk of the incentive rate of return scheme. He went on to suggest that since cost overruns would have to be extremely large before the minimum rate is activated, the sponsors' incentive to avoid cost overruns would be preserved. He also pointed out that U.S. investment tax credit considerations cause an effective minimum rate to exist in the U.S. scheme.

While Mr. Evans admitted that he had not analyzed in any detail the concept of the minimum rate or different approaches that might be taken to estimate what the appropriate rate should be, he supported Mr. Lackenbauer's recommendation of a minimum rate of 16 percent, which was based on the estimated DCF cost of capital for Foothills (Yukon). The Board noted that, based on Mr. Lackenbauer's recommended operating phase rate of 17 - 17.5 percent, it is implicit in his evidence that the minimum rate should be set at a level 1 to 1.5 percentage points below the operating phase rate.

In considering the evidence submitted, the Board took particular note of the need to maintain a balance between the goal of preserving Foothills (Yukon)'s ability to finance construction of the Dempster line, and that of providing sufficient incentive to avoid cost overruns of a magnitude which would jeopardize the benefits to Canadians under the Canada-U.S. Agreement, whereby the United States shippers would pay the cost of service from Dawson to Whitehorse on the Dempster line.

The Board therefore concludes that its previous proposal for a minimum rate of 14.5 percent is appropriate in the circumstances.

Marginal Rate

In its Proposed Approach to Incentive Rate of Return for the Northern Pipeline dated October 1978, the Board defined the marginal rate as the rate of return on the incremental

dollars invested to move from one cost performance ratio to another. It further stated that as the importance of the marginal rate was to provide incentive to avoid cost overruns, the rate should lie below the investor's cost of capital. In that first edition and the subsequent Revised Approach dated January 1979, the Board set out illustrative rates of ten and nine percent respectively.

Foothills (Yukon) in its reply of November 1978, accepted the principle that the marginal rate must be set below the cost of capital and suggested that a marginal rate of 10.5 percent would be acceptable.

In this proceeding, both expert witnesses for the Applicant agreed that the marginal rate is really the measure of the degree of incentive to be built into the scheme. Mr. Lackenbauer recommended a marginal rate of 11 - 11.5 percent while Mr. Evans recommended a rate of 10 percent.

Mr. Lackenbauer, while stating that no theoretical underpinning exists per se for deriving a marginal rate in this instance, based his recommendations on two approaches. The first involved estimating the cost of debt to Foothills (Yukon) at approximately 11.5 percent and arguing that the marginal rate should not be set beneath that level because it is unreasonable to ask an equity investor to commit funds below the rate available on fixed income securities. In his second approach he noted the six percentage point differential that

exists between F.E.R.C.'s recommended Alaska segment operating phase rate of 14 percent and its marginal rate of 8 percent. He took this differential and subtracted it from his recommended operating phase rate of 17 - 17.5 percent to arrive at 11 - 11.5 percent.

With respect to his first approach, Mr. Lackenbauer simply made the statement that it was unreasonable to ask an equity investor to commit funds below the rate available on fixed income securities. No further support was given this position, and the Board also notes that during the course of cross-examination Mr. Lackenbauer altered his estimated cost of debt to Foothills (Yukon) to 12.25 - 12.5 percent. In view of the lack of any more compelling reason to adopt this parameter and, in particular, its changing nature, the Board does not consider this approach a particularly useful one.

Mr. Evans also stated that he knew of no economic underpinning to which he could tie an estimate of what the marginal rate should be. However, he said that, in his opinion, the primary purposes of the Canadian marginal rate were to provide a substantial incentive to reduce cost overruns that U.S. gas consumers would have to bear and to determine the proportions of any cost overruns to be borne by the investors and U.S. consumers respectively.

Mr. Evans went on to state that, having these factors in mind, he had essentially adopted the F.E.R.C.'s judgment

with respect to the level of marginal rate that would provide a substantial incentive to avoid cost overruns and cause an approximately equal sharing of the burden of cost overruns between investors and consumers. This first objective resulted in his taking the 6 percent differential discussed above and deducting it from an operating phase rate of 17 percent to derive a marginal rate of 11 percent. Second, he noted that the sharing of cost overrun burdens implicit under the F.E.R.C. and NEB revised proposal produced an approximate range for the marginal rate of 9 - 10 percent. Considering the results of his analysis he recommended a marginal rate of 10 percent.

The Board regards the marginal rate as primarily a device for creating the appropriate degree of incentive to avoid cost overruns in the IROR Scheme. Furthermore, there was no evidence that the marginal rate, used in the mathematical equations for determining the center rate, equates with the cost of raising new equity to finance cost overruns, although there is probably an indirect relationship.

Having considered the evidence presented in connection with the marginal rate, the Board concludes that a rate of 10 percent is appropriate in the circumstances.

3.6 Project Risk Premium

The primary purpose of the Project Risk Premium is to compensate investors for the risk of project abandonment. It

relates to the risk of loss of equity capital as a result of failure to complete the project because of technical, financial, or other difficulties.

The influence of prebuilding on the risk of abandonment was explored during the Hearing. Company officers regarded prebuilding the southern part of the pipeline as being positive, because it would provide earlier cash flows and because completion of the "prebuild" portion of the project would provide preliminary evidence to investors that the sponsors were capable of completing the project. The Applicant's expert witnesses, on the other hand, contended that because the "prebuild" portion required front-end loading of equity funds, equity risk exposure would be increased over an otherwise levelized pattern of equity injection. They concluded therefore that, on balance, prebuilding was a neutral risk factor. The Board believes that the "prebuild" portion has more positive than negative influence on the risk of abandonment.

Mr. Lackenbauer claimed that investors do not value AFUDC in the same way they value cash earnings, because their objective in investing is the early receipt of dividends. Therefore, he suggested that this claim merited consideration in the determination of the Project Risk Premium because the sponsors would not receive dividends during the construction phase. However, in cross-examination, Mr. Lackenbauer stated

that Calgary Power, one of the highest quality utilities in Canada, has, at times, had as much as 50 percent of its net income in the form of AFUDC. Accordingly, the Board gives little weight to this factor.

Mr. Lackenbauer referred to the ability of Foothills (Yukon) and its sponsor companies to write-off capital losses against capital gains for tax purposes in the event of project abandonment. In cross-examination he suggested that the tax value of such capital losses would be extremely small in that these companies would probably never realize sufficiently large offsetting capital gains. He concluded, therefore, that no significant consideration should be given to the tax value of capital losses as a risk reducing factor, an observation with which the Board agrees. Also, Mr. Lackenbauer claimed that the Canadian sponsors' downside risk was twice that of their United States counterparts, because the United States sponsors have the ability to write-off their investment losses for income tax purposes in the event of abandonment, whereas the Canadian sponsors do not have the same ability. However, the Board notes that his recommended Project Risk Premium for Foothills (Yukon) of 2.25 percent to 2.50 percent is only slightly above the 2.00 percent Project Risk Premium awarded by the F.E.R.C. to the Alaska segment.

The F.E.R.C. found Project Risk Premiums of 2.0 percent and 1.5 percent to be appropriate for the Alaska and

Northern Border segments respectively. Mr. Evans maintained that Foothills (Yukon) was more akin to Northwest Alaskan and, therefore, concluded that a Project Risk Premium of at least 2.0 percent was appropriate. Furthermore, he argued that abandonment on any one of the zones would result in non-completion of the entire Foothills (Yukon) system and, therefore, there was no justification for a differential in the Project Risk Premium among zones. Although this reasoning has some merit, the Board does not believe that the Project Risk Premium should necessarily be evaluated solely in relation to the Alaska segment's awarded Project Risk Premium. Given that the F.E.R.C. found different Project Risk Premiums for the Northern Border and Alaska segments, it appears to the Board that a reasonable approach would be to find Project Risk Premiums for the Zones of the Foothills (Yukon) system in line with their relative positions between Alaska and Northern Border. However, at the same time, the Board recognizes the importance of the relationship between the risk of abandonment for Foothills (Yukon) and the completion risk posed in the Alaska segment. The Board agrees with Mr. Evans that while the value to the equity investor of a completed Foothills (Yukon) system, assuming failure to complete the Alaska segment, may be positive to the extent that facilities could be used for Canadian gas, it is subject to substantial risk of loss. It

appears to the Board that if the F.E.R.C. had set a uniform Project Risk Premium for the Northern Border and Alaska segments, on a composite basis, it would have been somewhere between 1.5 percent and 2.0 percent. The Board believes that the risk of Foothills (Yukon) not being able to complete its portion of the Northern Pipeline due to technical and other difficulties is somewhat less than the risk of the Alaska segment, since less than 25 percent of the Foothills (Yukon) system traverses terrain similar to that faced in the Alaska segment. Other than Zone 1, the system will be built in areas where the sponsor companies have had considerable experience, particularly in the case of prebuild zones, where the system will be constructed in conventional pipelining areas.

In cross-examination, Mr. Evans agreed that having the Foothills (Yukon) equity AFUDC rate equal to the Non-Incentive Rate resulted in partial compensation for the risk of abandonment being incorporated into the equity AFUDC portion of rate base. The F.E.R.C. IROR Scheme, in contrast, sets the equity AFUDC rate for rate base purposes equal to the Operating Phase Rate.

In addition to the evidence adduced by the Applicant's witnesses, the Board believes that the F.E.R.C. analysis and resulting awards also provide a useful framework for evaluating the reasonableness of Canadian Project Risk Premiums.

Having considered all of the evidence submitted, the Board finds that the following Project Risk Premiums are appropriate:

	<u>Approved Project Risk Premium</u>
Zone 1	1.90 percent
Zones 2 - 5	1.75 percent
Zones 6 - 9	1.50 percent

3.7 IROR Risk Premium

The IROR Risk Premium is to compensate equity investors for the risks introduced by the variability in the allowed rate of return created by the IROR mechanism. In the absence of an IROR Risk Premium the investor would be adequately compensated only if there were no perceived difference between an investment yielding a certain specified return and one with a variable uncertain return. The preference of investors for more certain returns is indicated by the differences in rates of return evident in financial markets. Investment opportunities yielding relatively less certain returns require higher expected returns in order to attract investors. The IROR Risk Premium when added to the Non-Incentive Rate raises the expected return by an amount estimated to compensate for the uncertainty of the IROR Scheme.

A further consideration of the Board in determining an appropriate IROR Risk Premium was the uncertainty associated with the unique cost control and regulatory structure

established for the Foothills (Yukon) system. The F.E.R.C. in Order No. 31 stated that additional uncertainty was perceived to exist due to the newly established inflation adjustment procedure and change in scope mechanism which had no prior history. The uncertainty connected with these new procedures was cited as the major reason for upward revisions to the IROR Risk Premiums for the Alaska and Northern Border segments above those previously proposed. The Board has similarly considered the uncertainty introduced by the untested aspects of the IROR scheme. In these Reasons for Decision the Board has, however, sought to reduce uncertainty by modification to the procedure for determining inflation adjustments to capital cost estimates and by the treatment of AFUDC for cost performance measurement. The variability of return inherent in the IROR Scheme is directly affected by the marginal rate and the minimum rate selected. Higher marginal rates reduce the variability of the scheme, because rates of return change less rapidly as cost performance ratios move from the centre point. A minimum rate limits the downside variability of the IROR schedule. The significance of these factors may be further affected by the expected construction risk of the zone in question. For example, a minimum rate may be viewed as providing more assurance to the investor in a zone of higher construction risk than in one of relatively lower risk.

The Board has given explicit consideration to the effect of the 10 percent marginal rate and 14.5 percent minimum

rate in determining the appropriate IROR Risk Premium for each zone of the Foothills (Yukon) system. That consideration, in addition to the factors previously discussed, has led the Board to establish IROR Risk Premiums of 0.6 percent for Zone 1, 0.5 percent for Zones 2, 3, 4, and 5, and 0.4 percent for Zones 6, 7, 8, and 9.

The possible prebuilding of Zones 6, 7, 8, and 9 is not considered to require a change to the 0.4 percent IROR Risk Premium established for those zones.

3.8 One-Time Adjustment

Mr. Lackenbauer suggested that the One-Time Adjustment should be revalued when the Operating Phase Rate changed. He contended that if the Operation Phase Rate is changed over the life of the Foothills (Yukon) system, then the discounted cash flow streams to Foothills (Yukon) would not be equal to those originally intended and may penalize Foothills (Yukon).

It is the Board's view that the One-Time Adjustment should not be revalued when the Operating Phase Rate changes during the operation phase of the Foothills (Yukon) system. The One-Time Adjustment was, as its name implies, intended to be an adjustment not subject to further change*, and the Board believes that changes in the operating phase rate should not alter the value of the One-Time Adjustment.

* See pages 3-10 to 3-12 of this Decision.

3.9 Summary

The Board's decisions on the parameters of the IROR scheme are contained in the following table, which shows for purposes of comparison those in F.E.R.C. Orders No. 31 and 31-B and the Board's Proposal of January 1979.

CANADA - UNITED STATES IROR PARAMETERS

<u>Parameter</u>	<u>Authorized by NEB</u>				<u>NEB Proposal January 1979</u>		<u>F.E.R.C. Order 31 & 31-B</u>	
	<u>Zone 1 (percent)</u>	<u>Zones 2,3,4,5 (percent)</u>	<u>Zones 6,7,8,9 (percent)</u>	<u>Zone 1 (percent)</u>	<u>Zones 2,3,4,5 (percent)</u>	<u>Zones 6,7,8,9 (percent)</u>	<u>Alaska (percent)</u>	<u>Northern Border (percent)</u>
Centre Point	1.40	1.30	1.20**	1.45	1.35	1.25*	1.0	1.1
Operation Phase Rate	16.00	16.00	16.00	16.00	16.00	16.00	14.00	13.00
Project Risk Premium	1.90	1.75	1.50	1.25	1.25	1.25	2.00	1.50
IROR Risk Premium	0.60	0.50	0.40	0.50	0.50	0.25	1.50	0.50
Centre Rate	18.50	18.25	17.90	17.75	17.75	17.50	17.50	15.00
Marginal Rate	10.00	10.00	10.00	9.00	9.00	9.00	8.00	8.00
Equity AFUDC Rate	17.90	17.75	17.50	17.25	17.25	17.25	14.00	13.00

Note: Zone 1 - Northern Yukon.

Zones 2, 3, 4, 5 - S. Yukon, N. British Columbia, N. Alberta

Zones 6, 7, 8, 9 - S. Alberta, S. British Columbia, Saskatchewan

* Except for prebuilt facilities, when 1.20 would apply.

** Except for prebuilt facilities, when 1.15 would apply.

4. PHASE I AND PHASE II TARIFF MATTERS

In its Reasons for Decision following Phase II of this Hearing, the Board drew attention to a number of items on which it required further clarification and directed that Foothills (Yukon) should address these issues in the Phase III proceedings.

4.1 Transition from "Prebuild" to Mainline Tariff

Two of the items deferred for further consideration during Phase III are directly related to the first year of operation of the mainline, at which time the "prebuild" tariff would terminate and the mainline tariff would become effective. The specific areas of concern were:

- (i) to establish that the mainline tariff would be the only tariff effective on the Canadian segment of the Alaska Highway Gas Pipeline System, once completed, covering the possibly continued transmission of Alberta gas along with Alaska gas, and
- (ii) inadequate consideration had been given to the effect of the Minimum Bill and Interim Rate, applicable during the initial period of operation of the mainline, if Alberta gas continued to be transported at the same time.

In respect of the first item above, some confusion had arisen because the Service Agreement in the Foothills (Yukon) subsidiary company "prebuild" tariff (subsection 3.2) contained the description "new" when referring to the tariff that would apply if transportation of Alberta gas continued once the mainline was operational. This matter was dealt with expeditiously during Phase III, when it was confirmed in direct evidence that:

"Foothills (Yukon) drafted the prebuild tariff on the basis that once the mainline tariff takes effect, the prebuild tariff would cease to be effective for the transportation of Alberta gas and consequently the transportation of Alberta gas and Alaska gas would be governed by the single mainline tariff."

The Board found this explanation acceptable.

The second item draws attention to the problems that may arise during the initial period of operation of the mainline if Alberta gas continues to be delivered through Zones 6 to 9 while no Alaska gas is actually transported at the same time in those zones. The Board, in its Reasons for Decision on Phase I, directed that the mainline tariff be amended to provide for a Minimum Bill and Interim Rate to apply during the first year of operation of the mainline when the throughput of Alaska gas has not reached design capacity. Efforts to apply these provisions in Zones 6 to 9 in respect of Alaska gas, when the prebuilt segments have already been operational for a number of years, transporting, (and continuing to transport) a substantial volume of Alberta gas, would be impractical and inappropriate. If the Minimum Bill and Interim Rate provisions did not apply to Zones 6 to 9, then once the mainline tariff commenced, the full cost of service would be allocated to all shippers of Alaska and/or Alberta gas on the basis of their Zone Allocable Share. As it now stands the mainline tariff will commence on the earliest of the following:

- (a) when gas first begins to flow,

- (b) sixty days after the leave to open order has been granted by the Board for the whole of the pipeline in Canada, or
- (c) the commencement of the tariff in the United States.

Under (a) the allocation of the full cost of service to all shippers on the basis of their Zone Allocable Share, all else being equal, would be equitable. However, if the effective date of the mainline tariff is (b) or (c), the shippers of Alaska gas on Zones 6 to 9 would be billed for their Zone Allocable Share of the full cost of service even though they would be receiving no gas, while the shippers of Alberta gas would continue to receive the same volume but at a potentially reduced cost. If, however, the transition to the mainline tariff in these zones were deferred until Alaska gas begins to flow, this problem would be alleviated. The continued accumulation of AFUDC on the incremental facilities to complete the pipeline when Alaska gas begins to flow would be allowed by the Board in the meantime.

Accordingly, the Board directs Foothills (Yukon) to amend its mainline tariff to provide as follows:

In respect of those zones which have been transporting, and continue to transport, Alberta gas, i.e., Zones 6, 7, 8, and 9, the tariff shall commence upon the day when Alaska gas first begins to flow, and the Minimum Bill and Interim Rate provisions will apply if required. That is to say, if, at the time the mainline tariff commences in Zones 6, 7, 8, and 9, the combined volume of throughput of Alberta and Alaska gas is sufficiently below design capacity that the recovery of the full cost of service on that volume would be inequitable, then the higher of the Minimum Bill or the Interim Rate would apply.

4.2 Foothills (Yukon) Administrative Expense

During Phase I and Phase II, Foothills (Yukon)'s administrative charge to be allocated to each subsidiary company zone under the cost of service tariff, both "prebuild" and mainline, was discussed in detail. It was established that such charges would cover the administration of the tariff, including the preparation of budgets and forecasts, and the processing of billing and payments. However, it was also established that during the period from 1 January 1979 until construction of the mainline is complete, Foothills (Yukon) would be incurring additional expenses which would be capitalized. Because of its concern that there be a clear segregation of costs between construction and operation of the "prebuild" facilities and the construction of the mainline, the Board sought to establish during Phase III a clear understanding of what the functional responsibilities of Foothills (Yukon) would be during the whole of the period from 1 January 1979 to completion of the mainline, the nature of costs being incurred, and the bases and method of allocation between projects and zones proposed by Foothills (Yukon).

In direct testimony, it was established that in addition to the administration of the "prebuild" tariff, from 1 January 1979 until completion of construction of the mainline, Foothills (Yukon) would be incurring costs related to its overall responsibility for coordinating and monitoring the

entire project, securing financing, liasing with the Northern Pipeline Agency and the National Energy Board, and providing specific services for its subsidiary companies, such as major materials procurement.

During cross-examination, witnesses for Foothills (Yukon) explained that to the maximum extent possible, costs incurred in relation to specific zones would be direct charges to those zones. During construction of the "prebuild" facilities, all such direct charges would be capitalized, while during operation of the "prebuild" facilities, operating costs related thereto would be recovered under the tariff, the remainder being capital costs of constructing the mainline. In respect of indirect charges unidentified by zone, it was proposed they be allocated on the basis of project budgets, subject to adjustment on completion of construction on the basis of project costs as opposed to those budgets. This proposed method of allocation appeared to load the allocation towards those zones in which construction was taking place, prebuilding initially and mainline later, and ignore the Board's earlier suggestion that monitoring costs from the Northern Pipeline Agency and the National Energy Board be allocated to zones on the basis of "filed capital costs". Foothills (Yukon) admitted that its accounting system and its methods of allocation have not yet been finalized.

Since Foothills (Yukon) indicated that a definitive ruling on this matter is not critical to the financing of the project, the Board proposes that further consideration of the subject be deferred for the time being, on the understanding that when Foothills (Yukon) next appears before the Board for approval of items for inclusion in rate base, this issue will be raised.

4.3 Tariff Application of the One-Time Adjustment

At this time it is not possible to predict the length of time that will be required after the commencement of the tariff to finalize the determination of the one-time adjustment to rate base. If, at the end of six months from the commencement of the tariff, the calculation of the one-time adjustment to rate base has not been completed, the Board may then approve an estimate for inclusion in the rate base of Foothills (Yukon) and/or its subsidiaries, with related recoveries through the cost of service. At such time as the actual calculation is completed, the appropriate adjustment will be made.

5. DISPOSITION

Review

1. Foothills (Yukon) is required to amend its mainline tariff so that the date of the commencement of the tariff shall be as follows:

- (a) upon the day when gas first begins to flow; or
- (b) sixty days after the leave to open order has been granted by the Board for the whole of the pipeline in Canada; or
- (c) upon the day of the commencement of the tariff in the United States under F.E.R.C Order 31 and amendments thereto,

whichever day shall first occur.

2. Foothills (Yukon)'s request for changes to the tariff requirements in the Phase I Decision in respect of:

- 1. 30-day Outage
- 2. Start of the Tariff
- 3. Minimum Bill
- 4. Interim Rate

is hereby denied.

3. Foothills (Yukon) is required in Phase IV to deal with the situation where an extended delay might occur in the start of the flow of gas after the pipeline is complete in Canada.

Incentive Rate of Return

4. An Incentive Rate of Return Scheme is to be instituted in conformity both with the Regulations* contained in Appendix B and with these Reasons for Decision.

The Incentive Rate of Return and its application as described in the Regulations may be varied if:

- (a) any significant change in the risks applicable to common equity occurs due to a change in the financing plan from that envisaged at the time the rate was determined;
- (b) the capital structure varies by more than five percentage points, from 25 percent common equity on completion of the pipeline;
- (c) circumstances arise in the future which are unforeseen at this time, but which, in the opinion of the Board, would make a change in the Incentive Rate of Return Scheme desirable.

Phase I and Phase II Tariff Matters

5. Foothills (Yukon)'s tariff shall be amended in respect of the form and content relating to the transition from the "prebuild" to the mainline tariff in conformity with these Reasons for Decision.

* Must be submitted to the Privy Council Office, in accordance with the statutory instruments act, Stats. Can. 1970-71-72, c.38, as amended and may be modified with respect to form.


6. Foothills (Yukon) is required to submit its proposal for the accounting and cost allocation for tariff purposes of Foothills (Yukon)'s administrative expense when Foothills (Yukon) next appears before the Board for approval of items to be included in its rate base.
7. If, at the end of six months, from the commencement of the tariff, the one-time adjustment to rate base, arising from the IROR scheme, has not been determined, the Board may approve an estimate of it, subject to adjustment, for inclusion in the rate base, with related recoveries, through the cost of service.

* * * * *


The foregoing, together with the Proposed Regulations pursuant to Section 36 of the Northern Pipeline Act, which form Appendix B of this Decision, set forth our Reasons for Decision and our Decision in this matter.



C.G. Edge,
Presiding Member



L.M. Thur,
Member



R.B. Horner,
Member

NATIONAL ENERGY BOARD



OFFICE NATIONAL DE L'ÉNERGIE

ORDER NO. RH-2-79

IN THE MATTER OF the National Energy Board Act
and the Regulations made thereunder, and the
Northern Pipeline Act; and

IN THE MATTER OF a public hearing respecting
tariffs, tolls to be charged by Foothills Pipeline
(Yukon) Ltd. (hereinafter referred to as
Foothills), the financing of the pipeline, and
other related matters. File No.: 1510-2-2.

B E F O R E the Board on Thursday, the 12th day of April, 1979.

WHEREAS pursuant to the National Energy Board Act, the
tolls to be charged by Foothills must be just and reasonable,

AND WHEREAS pursuant to the Northern Pipeline Act, the
Board may approve the form and content of a tariff filed at the
time the financing of the pipeline is being considered,

AND WHEREAS Foothills has filed a submission on the
form and content of the tariff for the pipeline dated 21 March
1979 and, at the request of the Board, additional information
dated 21 March 1979,

AND WHEREAS Foothills has applied to have certain
expenses incurred prior to 1 January 1979 included in its rate
base,

AND WHEREAS the National Energy Board has issued a
"Proposed Method for the Regulation of Tolls and Tariffs of the
Foothills Pipeline", on 18 April 1979, and wishes to receive the
views of Foothills and interested parties on this proposal,

- 2 -

AND WHEREAS the National Energy Board has issued a "Proposed Approach to Incentive Rate of Return for the Northern Pipeline" on 5 October 1978 and has received submissions on it and reissued its "Proposed Approach to Incentive Rate of Return for the Northern Pipeline" on 24 January 1979, and deems it desirable to hold a public hearing for the purpose of issuing regulations on the Incentive Rate of Return scheme,

AND WHEREAS Foothills has announced its intent to prebuild the southern segments of the pipeline, for which segments the form and content of the tariff and the tolls to be charged during the initial period may be different from those during the later period when Alaskan gas is flowing,

AND WHEREAS the financing of the pipeline including any prebuilt segments has not yet been established to the satisfaction of the Board pursuant to condition 12 of Schedule III of the Northern Pipeline Act,
IT IS ORDERED THAT

1. A public hearing shall be held in the Hearing Room of the National Energy Board, Trebla Building, 473 Albert Street, in the City of Ottawa, in the Province of Ontario, commencing on Tuesday the 12th day of June, 1979, at 9:30 a.m. local time, for the purpose of hearing evidence respecting tariffs and tolls to be charged by Foothills, the Incentive Rate of Return scheme,

.../3

- 3 -

financing of the pipeline, and related matters. Such proceedings will be conducted in either of the two official languages, and simultaneous interpretation will be provided should a party to the proceedings request such facilities in his intervention.

2. Evidence and submissions shall be heard in three Phases:

PHASE I -

- (a) to enable the Board to determine whether the National Energy Board's Proposed Method for the Regulation of Tolls and Tariffs of the Foothills Pipeline, dated 18 April 1979, is an appropriate method for regulating Foothills' transportation tolls and charges; and
- (b) to enable the Board to determine whether the form and content of the Proposed Tariff, filed on 21 March 1979 by Foothills Pipe Lines (Yukon) Ltd., is an appropriate method to use in the determination of just and reasonable transportation tolls for the movement of gas through Zones 1 to 11 of the Canadian Segment of the Alaska Highway Gas Pipeline System;
- (c) to enable the Board, upon reading Foothills' application dated 12 April 1979, to determine whether certain preliminary expenditures made up to 31 December 1978, as recorded on the books of account of The Alberta Gas Trunk Line Company Limited, Westcoast Transmission Company Limited, Alberta Natural Gas Company Ltd., Foothills Pipe

.../4

- 4 -

Lines Ltd. and Foothills Pipe Lines (Yukon) Ltd. and its subsidiary companies, up to that date, qualify for inclusion in the Rate Base of Foothills Pipe Lines (Yukon) Ltd. and its subsidiary companies for the Alaska Highway Gas Pipeline System in Canada;

PHASE II

- (d) to enable the Board to determine whether the form and content of the Proposed Tariff, to be filed by Foothills by 1 May 1979, is an appropriate method to use in the determination of just and reasonable tolls for the movement of Alberta gas through the proposed southern portion (the portion to be prebuilt) of the Alaska Highway Gas Pipeline System.

PHASE III -

- (e) to finalize the approach to Incentive Rate of Return for the Northern Pipeline; and
- (f) to establish to the satisfaction of the Board that financing has been obtained for the pipeline and for any prebuilt sections of the pipeline, pursuant to Condition 12 of Schedule III of the Northern Pipeline Act.

The date for the commencement of Phase II and Phase III will be announced later.

3. Foothills shall serve, as soon as possible, but not later than 15 May 1979, a true copy of the form and content of the

.../5

- 5 -

tariff for the pipeline; the form and content of the tariff relating to prebuilt sections of the pipeline; the Board's Proposed Method for the Regulation of Tolls and Tariffs of the Foothills Pipeline, dated 18 April 1979; Foothills' application, dated 12 April 1979, which includes statements of preliminary expenditures on the Alaska Highway Gas Pipeline Project, as recorded on the books of account of the companies referred to in paragraph 2(a), together with a copy of the NEB audit report on these expenditures; the Board's Proposed Approach to Incentive Rate of Return for the Northern Pipeline, dated 24 January 1979; and a true copy of this Order upon all of its potential shippers and customers in Canada and the United States, upon the Attorneys-General of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, upon the Commissioner of the Yukon and the Commissioner of the Northwest Territories, and upon the United States Federal Energy Regulatory Commission, and, as soon as may be possible, upon those persons who have intervened pursuant to paragraph (5) hereof, and Foothills shall file proof of service thereof with the Board at the opening of the hearing.

4. Notice of the said hearing in the form prescribed by the Board, as set forth in the Notice attached to and forming part of this Order, shall be published on or before the 27th day of April, 1979, in one issue of each of "The Colonist" in the

.../6

- 6 -

City of Victoria, in the Province of British Columbia; "The Herald" in the City of Calgary and "The Journal" in the City of Edmonton, both in the Province of Alberta; "The Leader-Post" in the City of Regina, in the Province of Saskatchewan; "The Free Press" in the City of Winnipeg, in the Province of Manitoba; "The Globe and Mail" and "The Financial Post" in the City of Toronto, and "The Citizen" and "Le Droit" in the City of Ottawa, all in the Province of Ontario; "The Gazette", "Le Devoir", and "Financial Times of Canada" in the City of Montreal, in the Province of Quebec; and as soon as may be possible in the Canada Gazette.

5. Any respondent or intervenor intending to oppose or intervene in the said hearing shall, on or before the 1st day of June 1979, file with the Secretary of the Board thirty (30) copies of a written statement, in either of the two official languages, containing his reply or submission, together with any supporting information, particulars or documents, which shall include a concise statement of the facts from which the nature of the respondent's or intervenor's interest in the proceedings may be determined, which may admit or deny any or all of the facts alleged in the submission and/or additional information filed by Foothills, and which shall be endorsed with the name and address of the respondent or intervenor or his solicitor to whom

.../7

- 7 -

communications may be sent. Any respondent or intervenor shall, on or before the 1st day of June, 1979, serve three (3) copies of his reply or submission and supporting information, particulars or documents upon Foothills and one (1) copy each upon the Attorneys-General of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Quebec, the Commissioner of the Yukon Territory, the Commissioner of the Northwest Territories, and the United States Federal Energy Regulatory Commission.

6. In order to make potential interested parties in the United States aware of the proceedings, the National Energy Board has served copies of the notice of this hearing on all parties of record in the United States Federal Regulatory Commission Docket CP 78-123 et al, a proceeding on the United States portion of the Alaska Highway Gas Pipeline Project.

7. The National Energy Board Rules of Practice and Procedure shall apply mutatis mutandis to the proceedings.

8. Any interested party may examine a copy of the submission and additional information filed by Foothills as well as the Board's documents referred to in this Order at the office of:

National Energy Board,
Trebla Building,
473 Albert Street,
Ottawa, Ontario
K1A 0E5

or at the following addresses:

...8

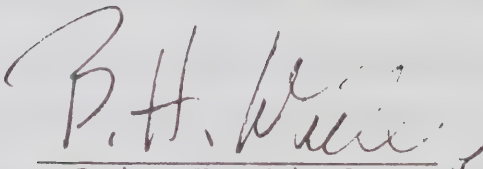
- 8 -

Foothills Pipe Lines (Yukon) Ltd.,
1600 Bow Valley Square II,
205 - Fifth Avenue S.W.,
Calgary, Alberta
T2P 2W4

Alaska Gas Project Office,
Federal Energy Regulatory Commission,
941 North Capitol Street, N.E.,
Room 3004,
Washington, D.C.
20426

DATED at the City of Ottawa, in the Province of Ontario,
this 12th day of April, 1979.

NATIONAL ENERGY BOARD



Brian H. Whittle,
Secretary

NATIONAL ENERGY BOARD
NOTICE OF HEARING
IN THE MATTER OF TOLLS, TARIFFS AND FINANCING OF
FOOTHILLS PIPE LINES (YUKON) LTD.

WHEREAS pursuant to the National Energy Board Act, the tolls to be charged by Foothills must be just and reasonable,

AND WHEREAS pursuant to the Northern Pipeline Act, the Board may approve the form and content of a tariff filed at the time the financing of the pipeline is being considered,

AND WHEREAS Foothills has filed a submission on the form and content of the tariff for the pipeline dated 21 March 1979 and, at the request of the Board, additional information dated 21 March 1979,

AND WHEREAS Foothills has applied to have certain expenses incurred prior to 1 January 1979 included in its rate base;

AND WHEREAS the National Energy Board has issued a "Proposed Method for the Regulation of Tolls and Tariffs of the Foothills Pipeline", on 18 April 1979, and wishes to receive the views of Foothills and interested parties on this proposal,

AND WHEREAS the National Energy Board has issued a "Proposed Approach to Incentive Rate of Return for the Northern Pipeline" on 5 October 1978 and has received submissions on it and reissued its "Proposed Approach to Incentive Rate of Return for the Northern Pipeline" on 24 January 1979, and deems it desirable to hold a public hearing for the purpose of issuing regulations on the Incentive Rate of Return scheme,

.../2

- 2 -

AND WHEREAS Foothills has announced its intent to prebuild the southern segments of the pipeline, for which segments the form and content of the tariff and the tolls to be charged during the initial period may be different from those during the later period when Alaskan gas is flowing,

AND WHEREAS the financing of the pipeline including any prebuilt segments has not yet been established to the satisfaction of the Board pursuant to condition 12 of Schedule III of the Northern Pipeline Act,

TAKE NOTICE that the Board has ordered that a public hearing shall be held commencing on Tuesday, the 12th day of June, 1979, at 9:30 a.m. in the Hearing Room of the National Energy Board, Trebla Building, 473 Albert Street, in the City of Ottawa, in the Province of Ontario for the purpose of hearing evidence respecting tariffs and tolls charged by Foothills, the Incentive Rate of Return scheme, financing, and other related matters. Such proceeding will be conducted in either of the two official languages and simultaneous interpretation will be provided should a party to the proceedings request such facilities in his intervention.

AND THE BOARD HAS FURTHER ORDERED THAT:

1. Evidence and submissions shall be heard in three phases:

.../3

- 3 -

PHASE I -

- (a) to enable the Board to determine whether the National Energy Board's Proposed Method for the Regulation of Tolls and Tariffs of the Foothills Pipeline dated 18 April 1979 is an appropriate regulatory method for regulating Foothills' transportation tolls and charges; and
- (b) to enable the Board to determine whether the form and content of the Proposed Tariff for the pipeline, filed on 21 March 1979 by Foothills Pipe Lines (Yukon) Ltd., is an appropriate method to use in the determination of just and reasonable transportation tolls for the movement of gas through Zones 1 to 11 of the Canadian Segment of the Alaska Highway Gas Pipeline System;
- (c) to enable the Board, upon reading Foothills application dated 12 April 1979, to determine whether certain preliminary expenditures made up to 31 December 1978, as recorded in the books of account of The Alberta Gas Trunk Line Company Limited, Westcoast Transmission Company Limited, Alberta Natural Gas Company Ltd., Foothills Pipe Lines Ltd. and Foothills Pipe Lines (Yukon) Ltd. and its subsidiary companies, up to that date, qualify for inclusion in the Rate Base of Foothills Pipe Lines (Yukon) Ltd. and its subsidiary companies for the Alaska Highway Gas Pipeline System in Canada;

.../4

- 4 -

PHASE II -

- (d) to enable the Board to determine whether the form and content of the Proposed Tariff, to be filed by Foothills by 1 May 1979 is an appropriate method to use in the determination of just and reasonable tolls for the movement of Alberta gas through the proposed southern portion (the portion to be prebuilt) of the Alaska Highway Gas Pipeline System;

PHASE III -

- (e) to finalize the approach to Incentive Rate of Return for the Northern Pipeline; and
- (f) to establish to the satisfaction of the Board that financing has been obtained for the pipeline and for any prebuilt sections of the pipeline, pursuant to Condition 12 of Schedule III of the Northern Pipeline Act.

The date for the commencement of Phase II and Phase III will be announced later.

2. Any respondent or intervenor intending to oppose or intervene in the said hearing shall on or before the 1st day of June, 1979, file with the Secretary of the Board thirty (30) copies of a written statement, in either of the two official languages, containing his reply or submission together with any supporting information, particulars or documents, which shall include a concise statement of the facts from which the nature of

.../5

- 5 -

the respondent's or intervenor's interest in the proceedings may be determined, which may admit or deny any or all of the facts alleged in the submission and/or additional information filed by Foothills and which shall be endorsed with the name and address of the respondent or intervenor or his solicitor to whom communications may be sent. Any respondent or intervenor shall, on or before the 1st day of June 1979, serve three (3) copies of his reply or submission and supporting information, particulars or documents upon Foothills and one (1) copy upon each of the Attorneys-General of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, upon the Commissioner of the Yukon Territory and the Commissioner of the Northwest Territories, and upon the United States Federal Energy Regulatory Commission,

3. In order to make potential interested parties in the United States aware of the proceedings, the National Energy Board has served copies of the notice of this hearing on all parties of record in the United States Federal Regulatory Commission Docket CP 78-123 et al, a proceeding on the United States portion of the Alaska Highway Gas Pipeline Project.

4. The National Energy Board Rules of Practice and Procedure shall apply mutatis mutandis to the proceedings.

5. Any interested party may examine copies of
(a) the submission and additional information filed by Foothills on the form and content of the tariff.

.../6

- 6 -

- (b) Foothills' application, dated 12 April 1979 and the Board's audit report on the preliminary expenditures as recorded in the books of account of The Alberta Gas Trunk Line Company Limited, Westcoast Transmission Company Limited, Alberta Natural Gas Company Ltd., Foothills Pipe Lines Ltd., and Foothills Pipe Lines (Yukon) Ltd. and its subsidiary companies, up to 31 December 1978, which may qualify for inclusion in the Rate Base of Foothills Pipe Lines (Yukon) Ltd. and its subsidiary companies on the Alaska Highway Gas Pipeline System;
- (c) the National Energy Board's proposals concerning the regulation of tolls and tariffs, the incentive rate of return scheme, and submissions received, at the office of

National Energy Board,
Trebla Building,
473 Albert Street,
Ottawa, Ontario
K1A 0E5

or at the following addresses:

Foothills Pipe Lines (Yukon) Ltd.,
1600 Bow Valley Square II,
205 - Fifth Avenue S.W.,
Calgary, Alberta
T2P 2W4

Alaska Gas Project Office,
Federal Energy Regulatory Commission,
941 North Capitol Street, N.E.,
Room 3004,
Washington, D.C.
20426

DATED at the City of Ottawa, in the Province of
Ontario, this 12th day of April, 1979.

NATIONAL ENERGY BOARD

Brian H. Whittle
Secretary

NATIONAL ENERGY BOARD



OFFICE NATIONAL DE L'ÉNERGIE

ORDER NO. PO-4-RH-2-79

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder, and the Northern Pipeline Act; and

IN THE MATTER OF a public hearing respecting tariffs, tolls to be charged by Foothills Pipe Lines (Yukon) Ltd. (hereinafter referred to as Foothills), the financing of the pipeline, and other related matters.

File No.: 1510-2-2.

B E F O R E the Board on Wednesday, the 4th day of July, 1979.

WHEREAS, by Order No. RH-2-79, as amended, dated the 12th day of April, 1979, a public hearing has been commenced for the purpose of hearing evidence respecting tariffs and tolls to be charged by Foothills, the financing of the pipeline and related matters, which hearing is to be held in four phases;

AND WHEREAS the evidence and submissions to be heard in Phase III will enable the Board to finalize the approach to the Incentive Rate of Return for the Northern Pipeline, such evidence and submissions in this Phase being confined to:

- (i) modifications that may be needed to the "Proposed Approach to Incentive Rate of Return for the Northern Pipeline", issued by the Board on 24 January 1979, arising from (ii), (iii) and (iv) below;
- (ii) matters related to the Federal Energy Regulatory Commission's Order No. 31, issued 8 June 1979, and any amendments thereto;

- (iii) matters referred to in the Reasons for Decision in Phases I and II of these proceedings; and
- (iv) the effect of any significant change to the financing plan from that placed in evidence during the Board's Northern Pipeline Hearing.

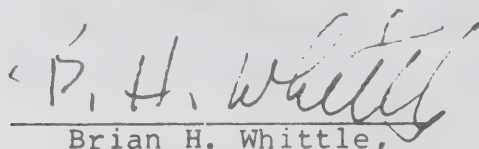
IT IS ORDERED THAT:

1. The said public hearing will be resumed on Tuesday, the 23rd day of October, 1979, at 9:00 a.m. in the Hearing Room of the National Energy Board, Trebla Building, 473 Albert Street, in the City of Ottawa, in the Province of Ontario, for the hearing of evidence, submissions, and arguments relating to the said Phase III;
2. In this Order, "party" means Foothills and any respondent or intervenor who has filed with the Secretary of the Board a written statement pursuant to paragraph 5 of Order No. RH-2-79;
3. Foothills shall, on or before the 2nd day of October, 1979, file with the Secretary of the Board, thirty (30) copies of its direct evidence in written question and answer form respecting Phase III and serve one (1) copy thereof upon all parties to this Hearing and upon the Attorneys-General of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, the Commissioner of the Yukon and the Commissioner of the Northwest Territories, and upon the United States Federal Energy Regulatory Commission:

4. Any party other than Foothills who wishes to present direct evidence to the Board at the hearing of Phase III shall prepare such evidence in written question and answer form and shall, on or before the 9th day of October, 1979, file fifteen (15) copies thereof with the Secretary of the Board and a copy thereof upon Foothills and upon each other party.

DATED at the City of Ottawa, in the Province of Ontario, this 4th day of July, 1979.

NATIONAL ENERGY BOARD



Brian H. Whittle,
Secretary

NATIONAL ENERGY BOARD



OFFICE NATIONAL DE L'ÉNERGIE

ORDER NO. RH-R-1-79

IN THE MATTER OF the National Energy Board Act
and the Regulations made thereunder; and

IN THE MATTER OF an application for a review
and variation, pursuant to subsection 17(1)
of the National Energy Board Act, by Foothills
Pipe Lines (Yukon) Ltd. (hereinafter referred
to as "Foothills (Yukon)"), of the Decision in
Phase I of a public hearing respecting tariffs
and tolls to be charged by Foothills (Yukon),
the financing of the pipeline, and other related
matters, held under Part IV of the National
Energy Board Act and under the Northern Pipeline
Act, (hereinafter referred to as "the Foothills
(Yukon) hearing"), filed with the Board under
File No.: 1510-2-2.

B E F O R E the Board on Thursday, the 6th day of September, 1979.

WHEREAS the National Energy Board ("the Board") ordered,
by Order No. RH-2-79, that a public hearing be held in Ottawa
commencing on 12 June 1979 to hear evidence and submissions on
the tariffs and tolls to be charged by Foothills (Yukon), the
financing of the Foothills (Yukon) natural gas pipeline and other
related matters;

AND WHEREAS the Board has decided to hear evidence and
submissions on these matters in phases;

AND WHEREAS the specific matters that were the subject
of Phase I of the Foothills (Yukon) hearing were the examination of
the National Energy Board's Proposed Method for the Regulation of
the Tolls and Tariffs of the Foothills (Yukon) Pipeline, the form
and content of the tariff for the pipeline, excluding provisions for
the pre-built facilities, and the question of inclusion of

- 2 -

preliminary expenditures incurred up to 31 December 1978 in the rate base of Foothills (Yukon) and its subsidiary companies;

AND WHEREAS the Board has released, on 30 July 1979, its Reasons for Decision on Phase I and issued Order No. TG-1-79 by which the Board disposed of the above issues;

AND WHEREAS the Board has received an application dated 28 August 1979 for a Review and Variation of the decision of the Board in the matter of Phase I of the public hearing respecting tariffs and tolls to be charged by Foothills (Yukon), the financing of the pipeline and other related matters dated July 1979;

AND WHEREAS the Board has determined that a review should take place;

AND WHEREAS the Board is prepared to hear new evidence in respect of those matters raised in the said application;

AND WHEREAS the Board wishes to hear Foothills (Yukon) and all parties of record to the Foothills (Yukon) hearing on Foothills (Yukon) Application for Review and Variation.

IT IS ORDERED THAT:

1. The Application by Foothills (Yukon) for Review and Variation of the decision of the Board in the matter of Phase I of the public hearing respecting tolls and tariffs to be charged by Foothills (Yukon), the financing of the pipeline and

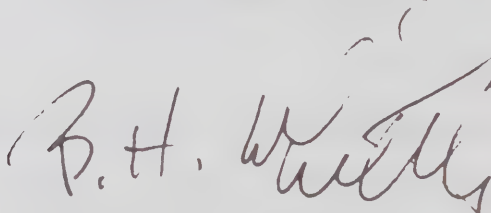
- 3 -

other related matters dated July 1979, be heard in Ottawa, in the Province of Ontario, at the beginning of Phase III of the hearing, commencing on the 23rd day of October, 1979.

2. Foothills (Yukon) shall, if it has not already done so, forthwith serve a true copy of its Application for Review and Variation upon each of the parties of record in the Foothills (Yukon) hearing.

DATED at the City of Ottawa, in the Province of Ontario, this 6th day of September, 1979.

NATIONAL ENERGY BOARD

A handwritten signature in dark ink, appearing to read "B. H. Whittle", is written over a horizontal line.

Brian H. Whittle
Secretary

ORDER NO. AO-3-RH-2-79

IN THE MATTER OF the National Energy Board Act
and the Regulations made thereunder, and the
Northern Pipeline Act; and

IN THE MATTER OF a public hearing respecting
tariffs and tolls to be charged by Foothills
Pipe Lines (Yukon) Ltd. (hereinafter referred
to as "Foothills"), the financing of the pipeline,
and other related matters. File No.: 1510-2-2

B E F O R E the Board on Friday, the 14th day of September, 1979.

WHEREAS, by Order No. RH-2-79, as amended, the National
Energy Board ordered that a public hearing be held in Ottawa for
the purpose of hearing evidence and submissions respecting tariffs
and tolls to be charged by Foothills, the financing of the pipeline
and other related matters, which hearing is to be held in four phases;

AND WHEREAS the Board has completed the hearing of
evidence, submissions and arguments on Phases I and II;

AND WHEREAS the Board has received an application by
Foothills for Review and Variation of the Board's Decision in
Phase I of the hearing;

AND WHEREAS by Order No. RH-2-79 as amended by Order No.
AO-2-RH-2-79, the Board had set out the subject matter of Phase III
of the hearing;

AND WHEREAS in view of the foregoing it appears expedient
to change, alter and vary the description of the subject matters of
Phase III;

- 2 -

IT IS ORDERED THAT the preamble to paragraph 2 of Order No. RH-2-79 and subparagraph (e) and (f) thereof, as amended by Order No. AO-2-RH-2-79, be revoked and the following substituted therefor:

"2. Evidence and submissions shall be heard in four Phases: (. . .)

PHASE III -

(e) to dispose of the application by Foothills dated 28 August 1979 for Review and Variation of the decision of the Board in the matter of Phase I of the public hearing respecting tariffs and tolls to be charged by Foothills Pipe Lines (Yukon) Ltd., the financing of the pipeline and other related matters, dated July 1979;

(f) to finalize the approach to the Incentive Rate of Return for the Northern Pipeline, such evidence and submissions in this Phase being confined to:

- (i) modifications that may be needed to the "Proposed Approach to Incentive Rate of Return for the Northern Pipeline", issued by the Board on 24 January 1979, arising from (ii), (iii), and (iv) below;
- (ii) matters related to the Federal Energy Regulatory Commission's Order No. 31 issued 8 June 1979, and any amendments thereto;

- 3 -

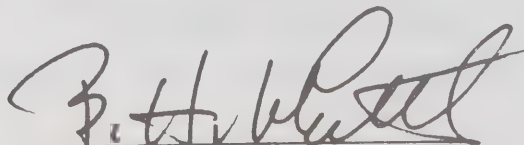
- (iii) matters referred to in the Reasons for Decision in Phases I and II of these proceedings; and
- (iv) the effect of any significant change to the financing plan from that placed in evidence during the Board's Northern Pipeline Hearing;
- (g) to dispose of matters raised in the Board's Reasons for Decision In the Matter of Phase II of the public hearing respecting tariffs and tolls to be charged by Foothills Pipe Lines (Yukon) Ltd., the financing of the pipeline and other related matters, yet to be issued, with respect to the transition from the "prebuild" tariff to the mainline tariff and the Foothills Pipe Lines (Yukon) Ltd. Administrative Charge;

PHASE IV -

- (h) to establish to the satisfaction of the Board that financing has been obtained for the pipeline and for any prebuilt sections of the pipeline, pursuant to condition 12 of Schedule III of the Northern Pipeline Act."

DATED at the City of Ottawa, in the Province of Ontario,
this 14th day of September, 1979.

NATIONAL ENERGY BOARD

A handwritten signature in dark ink, appearing to read 'B. H. Whittle', is written over a horizontal line.

Brian H. Whittle,
Secretary

NATIONAL ENERGY BOARD



OFFICE NATIONAL DE L'ÉNERGIE

ORDER NO. AO-1-PO-4-RH-2-79

IN THE MATTER OF the National Energy Board Act
and the Regulations made thereunder, and the
Northern Pipeline Act; and

IN THE MATTER OF a public hearing respecting
tariffs and tolls to be charged by Foothills
Pipe Lines (Yukon) Ltd. (hereinafter referred
to as "Foothills"), the financing of the pipeline,
and other related matters. File No.: 1510-2-2

B E F O R E the Board on Friday, the 14th day of September, 1979.

WHEREAS, by Order No. RH-2-79, as amended, the National
Energy Board ordered that a public hearing be held in Ottawa for the
purpose of hearing evidence and submissions respecting tariffs and
tolls to be charged by Foothills, the financing of the pipeline,
and other related matters, which hearing is to be held in four
Phases;

AND WHEREAS by Order No. AO-3-RH-2-79, the Board has
modified the description of the subject matters of Phase III of
the said hearing;

AND WHEREAS by Order No. PO-4-RH-2-79 the Board had previously set
forth certain directives respecting the conduct of Phase III of the
hearing, which is to commence on the 23rd day of October, 1979;

AND WHEREAS, in view of the foregoing, changes are required
in the directives set forth in Order No. PO-4-RH-2-79;

IT IS ORDERED THAT Order No. PO-4-RH-2-79 be revoked and
the following substituted therefor:

- 2 -

"1. The said public hearing will be resumed on Tuesday, the 23rd day of October, 1979, at 9:00 a.m. in the Hearing Room of the National Energy Board, Trebla Building, 473 Albert Street, in the City of Ottawa, in the Province of Ontario, first for the hearing of evidence, submissions and arguments relating to Item (e) of Phase III of the hearing and then for the hearing of evidence, submissions and arguments relating to Items (f) and (g) of Phase III of the hearing.

2. In this Order, "party" means Foothills and any respondent or intervenor who has filed with the Secretary of the Board a written statement pursuant to paragraph 5 of Order No. RH-2-79;

3. Foothills shall, on or before the 2nd day of October, 1979, file with the Secretary of the Board, thirty (30) copies of its direct evidence in written question and answer form respecting Item (f) of Phase III as described in Order No. RH-2-79, as amended by Order No. AO-3-RH-2-79, and serve one (1) copy thereof upon all parties to this hearing and upon the Attorneys-General of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Québec, the Commissioner of the Yukon and the Commissioner of the Northwest Territories, and upon the United States Federal Energy Regulatory Commission;

4. Foothills shall, on or before the 14th day after the release of the Board's Reasons for Decision in Phase II, file with the Secretary of the Board, thirty (30) copies of its direct evidence

- 3 -

in written question and answer form respecting Item (g) of Phase III as described in Order No. RH-2-79, as amended by Order No. AO-3-RH-2-79, and serve one (1) copy thereof upon all parties to this hearing and upon the Attorneys-General of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Québec, the Commissioner of the Yukon and the Commissioner of the Northwest Territories, and upon the United States Federal Energy Regulatory Commission;

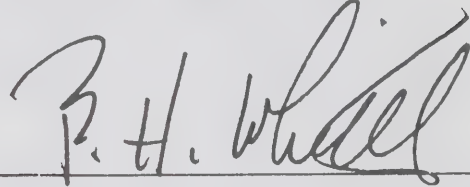
5. Any party other than Foothills who wishes to present direct evidence to the Board at the hearing of Phase III on Item (f) as described in Order No. RH-2-79, as amended by Order No. AO-3-RH-2-79, shall prepare such evidence in written question and answer form and shall on or before the 9th day of October, 1979, file fifteen (15) copies thereof with the Secretary of the Board and serve one (1) copy thereof upon Foothills and upon each other party;

6. Any party other than Foothills who wishes to present direct evidence to the Board at the hearing of Phase III on Item (g) as described in Order No. RH-2-79, as amended by Order No. AO-3-RH-2-79, shall prepare such evidence in written question and answer form and shall, on or before the 21st day after the release of the Board's Reasons for Decision on Phase II, file fifteen (15) copies thereof with the Secretary of the Board and serve one (1) copy thereof upon Foothills and upon each other party."

- 4 -

DATED at the City of Ottawa, in the Province of Ontario,
this 14th day of September, 1979.

NATIONAL ENERGY BOARD

A handwritten signature in dark ink, appearing to read "B. H. Whittle", is written over a horizontal line.

Brian H. Whittle,
Secretary.

NORTHERN PIPELINE ACT

Regulations made pursuant to Section 36
of the Northern Pipeline Act on the
Incentive Rate of Return (IROR) and
related Tariff Matters*

Short Title

1. These Regulations may be cited as the "Northern Pipeline IROR Regulations".

Interpretation

2. In these Regulations

"Act" means the Northern Pipeline Act,

"Actual Capital Costs" for purposes of determining the Incentive Rate of Return means the actual cost of construction by zone at the time "leave to open" is granted by the National Energy Board, for facilities in each zone, modified as follows by

including -

- estimates of costs incurred but not yet booked,

excluding -

- allowance for funds used during construction or interest during construction as calculated for rate base purposes,
- monitoring costs (Section 29 of the Act),

* Must be submitted to the Privy Council Office in accordance with the Statutory Instruments Act, Stats. Can. 1970-71-72, c.38 as amended, and may be modified with respect to form.

- working capital,
- property taxes,
- the road-related charges in the Yukon Territory of up to \$30 million, and
- "... the effect of increases in cost of delays caused by actions attributable to the U.S. shippers, related U.S. pipeline companies, Alaskan producers, the Prudhoe Bay deliverability or gas conditioning plant construction, and the United States or State Governments. If the appropriate regulatory bodies of the two countries are unable to agree upon the amount of such costs to be excluded, the determination shall be made in accordance with the procedures set forth in Article IX of the Transit Pipeline Treaty." (Annex III), as set forth in Annex III to Schedule I of the Act,

deflated to 1976 dollars by using the GNP price deflator in a manner to be determined by the Board,
plus a Provision for Funds Used During Construction as provided for in these regulations,

"Allowance for Funds Used During Construction" (AFUDC) has the same meaning as Interest During Construction in the Gas Pipe Line Uniform Accounting Regulations of the National Energy Board,

"Centre Point" means that Cost Performance Ratio which is associated with the Centre Rate,

"Centre Rate" means the rate of return on equity equal to the sum of the Operation Phase Rate, the Project Risk Premium, and the IROR Risk Premium, and is the rate applicable to the Centre Point Cost Performance Ratio,

"Cost Performance Ratio" means an index of the degree of cost overruns, which is Actual Capital Costs divided by Filed Capital Costs including adjustments,

"Equity" means common equity,

"Filed Capital Costs" means the filed capital costs in Schedule I of the Act, which costs exclude working capital, property taxes, and the provision for road maintenance in the Yukon Territory of up to \$30 million, deflated to 1976 dollars, as set forth in Schedule I to these regulations, and which costs shall be increased where the Minister and the Designated Officer of the Northern Pipeline Agency approve the procurement of equipment based on life-time costs instead of capital costs, with such adjustment determined by the Minister or the Designated Officer being the difference in capital cost between the approved item and that which would have been selected based on capital costs alone converted to 1976 dollars by the NEB using the GNP Price Deflator,

"Incentive Rate of Return" means the rate of the return on common equity as determined from Schedule III and as illustrated in Schedule IV,

"IROR Risk Premium" means the premium to compensate investors for the risk introduced by the variability in the allowed rate of return implied by the adoption of the IROR.

"Marginal Rate" means the return on the incremental dollars invested in common equity to move from one cost performance ratio to another,

"Non-incentive Rate" means the rate of return on equity equal to the sum of the Operation Phase Rate and a Project Risk Premium for those construction and completion risks unique to the pipeline,

"Operation Phase Rate" means the rate of return on equity allowed on natural gas pipelines in Canada of similar operating risk, which for the purposes of these regulations will be as contained in Schedule II.

"Pipeline" has the same meaning as in the Act,

"Prebuilt Facilities" means those pipeline facilities built to transmit gas of Canadian origin before the pipeline is placed in service for transmitting Alaska gas.

"Project Risk Premium" means the premium to compensate investors for the construction and completion risks unique to the Northern Pipeline Project, which, when added to the "Operation Phase Rate", equals the "Non-Incentive Rate".

"Provision for Funds Used During Construction" (PFUDC) means the provision for a finance charge to be included in the Actual Capital Costs,

Purpose

3. The purpose of these Regulations is to implement the Incentive Rate of Return Scheme referred to in Part II and section 4 of Schedule I of the Act.

Application

4. These Regulations apply to all companies constructing and operating the pipeline.
5. (1) Provision for Funds Used During Construction (PFUDC) shall be calculated at an annual rate of 11.7% based on the deflated actual cost of construction, compounded annually.
(2) The calculation of PFUDC shall be subject to the approval of the Board.
6. (1) Allowance for Funds Used During Construction (AFUDC) to be included in rate base shall be determined monthly.
(2) In respect of debt and preferred stock, AFUDC shall be the actual cost incurred, and, for the common equity component, it shall be one-twelfth of the non-incentive rate applied to the average balance in the common equity accounts for the previous month, including the common equity component of the previously capitalized AFUDC.
(3) The amount of AFUDC to be capitalized shall be subject to the approval of the Board.
7. The Board shall approve estimates of filed capital costs for prebuilt facilities.

8. The rate of return on common equity shall be derived from the information contained in Schedule II.
9. The Centre Point for each zone, as defined in Annex II of Schedule I to the Act, is shown in Schedule II.
10. Schedule II shall be used to determine the formulae for the Incentive Rate of Return in Schedule III.
11. The Incentive Rate of Return for each zone shall be determined according to the formulae contained in Schedule III.
12. (1) A one-time adjustment to the rate base shall be determined for each zone, except that where there may be "prebuilt facilities" there will be a one-time adjustment in each zone for prebuilt facilities and one for other facilities, by:
 - (a) calculating the common equity component of the investment in the rate base, excluding working capital, as approved by the Board on completion of construction and commencement of operations, including AFUDC, and determining the dollar value of the common equity component in each of the next 25 operating years on the assumption that the common equity is fully recovered by depreciation charges in equal annual installments

over the 25-year period,

- (b) applying the difference between the Incentive Rate of Return for each zone derived from Schedule III and the Operating Phase Rate to the dollar value of the common equity component in each year,
- (c) calculating the present value of the stream of income using the Operation Phase Rate as the discount rate, and
- (d) adding the present value determined in (c) to the rate base.

(2) The Board shall approve the determination of the one-time adjustment to rate base.

13. The one-time adjustment to rate base shall be recovered as a component of the cost of service by amortization at four percent per year on a straight line basis.

SCHEDULE 1A
SUMMARY OF FILED CAPITAL COSTS BY ZONE

ALASKA HIGHWAY GAS PIPELINE
56" 1080 psi SYSTEM - 2.4 Bcf/d

UNESCALATED COST 1976 \$million						
	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>TOTAL</u>
ZONE 1	8.4	10.0	174.2	182.8	143.4	518.8
ZONE 2	8.3	6.3	187.4	260.9	126.4	589.3
ZONE 3	-	55.6	108.3	250.6	221.6	636.1
ZONE 4	-	28.5	55.6	125.3	102.3	311.7
ZONE 5	3.5	0.4	125.9	215.9	254.7	600.4
ZONE 6	0.3	-	0.1	70.4	96.8	167.6
ZONE 7	0.2	-	-	51.6	38.2	90.0
ZONE 8	-	-	-	-	54.8	54.8
ZONE 9	<u>1.6</u>	<u>1.8</u>	<u>2.8</u>	<u>79.7</u>	<u>60.6</u>	<u>146.5</u>
TOTAL	22.3	102.6	654.3	1,237.2	1,098.8	3,115.2
	<u>=====</u>	<u>=====</u>	<u>=====</u>	<u>=====</u>	<u>=====</u>	<u>=====</u>

SCHEDULE 1B
SUMMARY OF FILED CAPITAL COSTS BY ITEM

ALASKA HIGHWAY GAS PIPELINE
56" 1080 psi SYSTEM - 2.4 Bcf/d

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	0.5	2.8	3.6	2.2	9.1
2	Pipeline	-	72.1	468.6	810.3	550.2	1,901.2
3	Compressor Stations	-	-	-	82.5	129.9	212.4
4	Support Facilities	-	1.8	75.0	73.7	21.3	171.8
5	O & M Facilities	-	-	-	10.1	11.7	21.8
6	Meter Stations	-	-	-	-	9.7	9.7
7	Communications	-	0.4	1.8	2.9	0.1	5.2
8	Miscellaneous	-	-	-	-	7.0	7.0
	Sub-Total	-	74.8	548.2	983.1	732.1	2,338.2
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	21.1	-	-	-	-	21.1
10	Head Office & Pre-Operations	-	10.6	8.5	7.0	5.0	31.1
11	Engineering	-	8.7	25.2	36.6	28.8	99.3
12	Contingency	-	0.3	22.4	56.0	49.5	128.2
	Sub-Total	21.1	19.6	56.1	99.6	83.3	279.7
	Total Before AFUDC	21.1	94.4	604.3	1,082.7	815.4	2,617.9
	AFUDC (11.7%)	1.2	8.2	50.0	154.5	283.4	497.3
	TOTAL	22.3	102.6	654.3	1,237.2	1,098.8	3,115.2

SCHEDULE 1.B.1
FILED CAPITAL COSTS BY ITEM - ZONE 1 (48-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	0.3	0.5	0.1	-	0.9
2	Pipeline	-	1.3	119.5	76.8	70.3	267.9
3	Compressor Stations	-	-	-	24.4	5.3	29.7
4	Support Facilities	-	1.8	24.8	29.8	3.7	60.1
5	O & M Facilities	-	-	-	3.7	4.9	8.6
6	Meter Stations	-	-	-	-	-	-
7	Communications	-	0.2	0.9	1.2	-	2.3
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	3.6	145.7	136.0	84.2	369.5
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	8.0	-	-	-	-	8.0
10	Head Office & Pre-Operations	-	4.6	3.7	3.1	2.2	13.6
11	Engineering	-	0.1	5.8	5.5	3.4	14.8
12	Contingency	-	0.2	7.3	6.8	4.2	18.5
	Sub-Total	8.0	4.9	16.8	15.4	9.8	54.9
	Total Before AFUDC	8.0	8.5	162.5	151.4	94.0	424.4
	AFUDC (11.7%)	0.4	1.5	11.7	31.4	49.4	94.4
	TOTAL	8.4	10.0	174.2	182.8	143.4	518.8

SCHEDULE 1.B.2
FILED CAPITAL COSTS BY ITEM - ZONE 2 (56-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	0.2	0.5	0.1	-	0.8
2	Pipeline	-	-	111.8	153.5	52.6	317.9
3	Compressor Stations	-	-	-	15.1	3.5	18.6
4	Support Facilities	-	-	44.5	29.7	-	74.2
5	O & M Facilities	-	-	-	3.5	4.6	8.1
6	Meter Stations	-	-	-	-	-	-
7	Communications	-	0.2	0.8	1.2	-	2.2
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	0.4	157.6	203.1	60.7	421.8
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	7.8	-	-	-	-	7.8
10	Head Office & Pre-Operations	-	4.5	3.6	2.9	2.1	13.1
11	Engineering	-	-	6.3	8.1	2.5	16.9
12	Contingency	-	0.1	7.9	10.1	3.0	21.1
	Sub-Total	7.8	4.6	17.8	21.1	7.6	58.9
	Total Before AFUDC	7.8	5.0	175.4	224.2	68.3	480.7
	AFUDC (11.7%)	0.5	1.3	12.0	36.7	58.1	108.6
	TOTAL	8.3	6.3	187.4	260.9	126.4	589.3

SCHEDULE 1.B.3
FILED CAPITAL COSTS BY ITEM - ZONE 3 (56-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	-	-	-	-
2	Pipeline	-	46.8	89.3	185.9	114.8	436.8
3	Compressor Stations	-	-	-	12.2	20.2	32.4
4	Support Facilities	-	-	-	-	-	-
5	O & M Facilities	-	-	-	-	-	-
6	Meter Stations	-	-	-	-	-	-
7	Communications	-	-	-	-	-	-
8	Miscellaneous	-	-	-	-	7.0	7.0
	Sub-Total	-	46.8	89.3	198.1	142.0	476.2
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	-	-	-	-	-	-
10	Head Office & Pre-Operations	-	-	-	-	-	-
11	Engineering	-	5.7	5.7	6.1	5.5	23.0
12	Contingency	-	-	1.2	14.4	16.0	31.6
	Sub-Total	-	5.7	6.9	20.5	21.5	54.6
	Total Before AFUDC	-	52.5	96.2	218.6	163.5	530.8
	AFUDC (11.7%)	-	3.1	12.1	32.0	58.1	105.3
	TOTAL	-	55.6	108.3	250.6	221.6	636.1

SCHEDULE 1.B.4
FILED CAPITAL COSTS BY ITEM - ZONE 4 (56-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	-	-	-	-
2	Pipeline	-	24.0	45.8	95.4	58.9	224.1
3	Compressor Stations	-	-	-	3.3	5.1	8.4
4	Support Facilities	-	-	-	-	-	-
5	O & M Facilities	-	-	-	-	-	-
6	Meter Stations	-	-	-	-	-	-
7	Communications	-	-	-	-	-	-
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	24.0	45.8	98.7	64.0	232.5
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	-	-	-	-	-	-
10	Head Office & Pre-Operations	-	-	-	-	-	-
11	Engineering	-	2.9	3.0	3.0	2.5	11.4
12	Contingency	-	-	0.6	7.4	7.0	15.0
	Sub-Total	-	2.9	3.6	10.4	9.5	26.4
	Total Before AFUDC	-	26.9	49.4	109.1	73.5	258.9
	AFUDC (11.7%)	-	1.6	6.2	16.2	28.8	52.8
	TOTAL	-	28.5	55.6	125.3	102.3	311.7

SCHEDULE 1.B.5
FILED CAPITAL COSTS BY ITEM - ZONE 5 (56-inch)

		UNESCALATED COST 1976 \$million					Total
Item No.	Description	1978	1979	1980	1981	1982	1976 \$ Cost
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	0.9	1.2	1.0	3.1
2	Pipeline	-	-	102.2	160.3	102.6	365.1
3	Compressor Stations	-	-	-	2.8	67.5	70.3
4	Support Facilities	-	-	5.7	9.5	10.8	26.0
5	O & M Facilities	-	-	-	-	1.3	1.3
6	Meter Stations	-	-	-	-	2.5	2.5
7	Communications	-	-	-	0.1	-	0.1
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	-	108.8	173.9	185.7	468.4
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	3.3	-	-	-	-	3.3
10	Head Office & Pre-Operations	-	-	-	-	-	-
11	Engineering	-	-	4.3	7.0	7.4	18.7
12	Contingency	-	-	5.4	8.7	9.3	23.4
	Sub-Total	3.3	-	9.7	15.7	16.7	45.4
	Total Before AFUDC	3.3	-	118.5	189.6	202.4	513.8
	AFUDC (11.7%)	0.2	0.4	7.4	26.3	52.3	86.6
	TOTAL	3.5	0.4	125.9	215.9	254.7	600.4

SCHEDULE 1.B.6
FILED CAPITAL COSTS BY ITEM - ZONE 6 (42-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	-	1.0	1.0	2.0
2	Pipeline	-	-	-	48.9	54.5	103.4
3	Compressor Stations	-	-	-	9.1	14.0	23.1
4	Support Facilities	-	-	-	2.1	4.9	7.0
5	O & M Facilities	-	-	-	-	0.6	0.6
6	Meter Stations	-	-	-	-	1.7	1.7
7	Communications	-	-	-	-	-	-
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	-	-	61.1	76.7	137.8
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	0.3	-	-	-	-	0.3
10	Head Office & Pre-Operations	-	-	-	-	-	-
11	Engineering	-	-	-	2.4	3.1	5.5
12	Contingency	-	-	-	3.0	3.9	6.9
	Sub-Total	0.3	-	-	5.4	7.0	12.7
	Total Before AFUDC	0.3	-	-	66.5	83.7	150.5
	AFUDC (11.7%)	-	-	0.1	3.9	13.1	17.1
	TOTAL	0.3	-	0.1	70.4	96.8	167.6

SCHEDULE 1.B.7
FILED CAPITAL COSTS BY ITEM - ZONE 7 (36-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	-	1.2	0.2	1.4
2	Pipeline	-	-	-	40.9	21.5	62.4
3	Compressor Stations	-	-	-	-	2.8	2.8
4	Support Facilities	-	-	-	2.6	1.9	4.5
5	O & M Facilities	-	-	-	-	0.3	0.3
6	Meter Stations	-	-	-	-	1.2	1.2
7	Communications	-	-	-	-	-	-
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	-	-	44.7	27.9	72.6
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	0.2	-	-	-	-	0.2
10	Head Office & Pre-Operations	-	-	-	-	-	-
11	Engineering	-	-	-	1.8	1.1	2.9
12	Contingency	-	-	-	2.2	1.4	3.6
	Sub-Total	0.2	-	-	4.0	2.5	6.7
	Total Before AFUDC	0.2	-	-	48.7	30.4	79.3
	AFUDC (11.7%)	-	-	-	2.9	7.8	10.7
	TOTAL	0.2	-	-	51.6	38.2	90.0

SCHEDULE 1.B.8
FILED CAPITAL COSTS BY ITEM - ZONE 8 (36-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	-	-	-	-
2	Pipeline	-	-	-	-	45.4	45.4
3	Compressor Stations	-	-	-	-	0.7	0.7
4	Support Facilities	-	-	-	-	-	-
5	O & M Facilities	-	-	-	-	1.6	1.6
6	Meter Stations	-	-	-	-	-	-
7	Communications	-	-	-	-	-	-
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	-	-	-	47.7	47.7
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	-	-	-	-	-	-
10	Head Office & Pre-Operations	-	-	-	-	-	-
11	Engineering	-	-	-	-	1.6	1.6
12	Contingency	-	-	-	-	2.5	2.5
	Sub-Total	-	-	-	-	4.1	4.1
	Total Before AFUDC	-	-	-	-	51.8	51.8
	AFUDC (11.7%)	-	-	-	-	3.0	3.0
	TOTAL	-	-	-	-	54.8	54.8

SCHEDULE 1.B.9
FILED CAPITAL COSTS BY ITEM - ZONE 9 (42-inch)

Item No.	Description	UNESCALATED COST 1976 \$million					Total 1976 \$ Cost
		1978	1979	1980	1981	1982	
	<u>DIRECT COSTS</u>						
1	Land & Land Rights	-	-	0.9	-	-	0.9
2	Pipeline	-	-	-	48.6	29.6	78.2
3	Compressor Stations	-	-	-	15.6	10.8	26.4
4	Support Facilities	-	-	-	-	-	-
5	O & M Facilities	-	-	-	2.9	-	2.9
6	Meter Stations	-	-	-	-	2.7	2.7
7	Communications	-	-	0.1	0.4	0.1	0.6
8	Miscellaneous	-	-	-	-	-	-
	Sub-Total	-	-	1.0	67.5	43.2	111.7
	<u>INDIRECT COSTS</u>						
9	Pre-Permit	1.5	-	-	-	-	1.5
10	Head Office & Pre-Operations	-	1.5	1.2	1.0	0.7	4.4
11	Engineering	-	-	0.1	2.7	1.7	4.5
12	Contingency	-	-	-	3.4	2.2	5.6
	Sub-Total	1.5	1.5	1.3	7.1	4.6	16.0
	Total Before AFUDC	1.5	1.5	2.3	74.6	47.8	127.7
	AFUDC (11.7%)	0.1	0.3	0.5	5.1	12.8	18.8
	TOTAL	1.6	1.8	2.8	79.7	60.6	146.5

Schedule II

	<u>Zone 1</u> (percent)	<u>Zone 2,3,4,5</u> (percent)	<u>Zone 6,7,8,9</u> (percent)
Operation Phase Rate	16.00	16.00	16.00
Non-Incentive Rate	17.90	17.75	17.50
Centre	18.50	18.25	17.90
<u>Marginal Rate</u>	<u>10.00</u>	<u>10.00</u>	<u>10.00</u>
Centre Point	1.40	1.30	1.20

* Except for prebuilt facilities, for which the Centre Point will be 1.15 in Zones 6, 7, 8, and 9

Schedule III

	<u>Incentive Rate of Return *</u> (percent)	
Zone 1	11.9	+ 10
	<u>Cost Performance Ratio</u>	
Zones 2, 3, 4, 5	10.725	+ 10
	<u>Cost Performance Ratio</u>	
Zones 6, 7, 8, 9	9.48	+ 10
	<u>Cost Performance Ratio</u>	
Zones 6, 7, 8, 9 (prebuilt facilities)	9.085	+ 10
	<u>Cost Performance Ratio</u>	

* but shall not be less than 14.5 percent

Schedule IV

Illustrative Rates Derived from Schedule III

<u>Cost Performance Ratio</u>	<u>Zone 1 percent</u>	<u>Zone 2,3,4,5 percent</u>	<u>Zone 6,7,8,9 percent</u>	<u>Zone 6,7,8,9 (Prebuilt) percent</u>
0.8	24.9	23.4	21.9	21.4
1.0	21.9	20.7	19.5	19.1
1.2	19.9	18.9	17.9	17.6
1.4	18.5	17.7	16.8	16.5
1.6	17.4	16.7	15.9	15.7
1.8	16.6	16.0	15.3	15.0
2.0	16.0	15.4	14.7	14.5
2.2	15.4	14.9	14.5	14.5

